

**The Narragansett Electric Company
d/b/a National Grid**

2020 Energy Efficiency Year-End Report

May 3, 2021

nationalgrid

May 3, 2021

VIA ELECTRONIC MAIL

Luly E. Massaro, Commission Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

**RE: Docket 4979 – 2020 Energy Efficiency Plan
Year-End Report with Confidential Vendor Schedules**

Dear Ms. Massaro:

On behalf of The Narragansett Electric Company d/b/a National Grid (“National Grid” or the “Company”), enclosed, please find an electronic version¹ of the Company’s 2020 Energy Efficiency Year-End Report (“Year-End Report”). This Year-End Report is being filed in accordance with Section 12 of the Annual Energy Efficiency Plan for 2020.

The Year-End Report includes several attachments and schedules which are summarized herein. Please be advised that the vendor schedules contain confidential and privileged information. As such, the confidential vendor schedules have been omitted from the public version of this filing. The confidential vendor schedules (contained on an Excel file entitled “Confidential Vendor Schedules 2020”) will be sent electronically to the Public Utilities Commission (“PUC”) and the Division of Public Utilities and Carriers (“Division”) via the Company’s encryption software, Egress Switch.

Pursuant to 810-RICR-00-00-1.3(H)(3) and R.I. Gen. Laws § 38-2-2(4)(B), the Company respectfully requests that the PUC treat the vendor schedules as confidential. In support of this request, the Company has enclosed a Motion for Protective Treatment of Confidential Information. In accordance with 810-RICR-00-00-1.3(H)(2), the Company also respectfully requests that the PUC make a preliminary finding that the confidential vendor schedules be exempt from the mandatory public disclosure requirements of the Rhode Island Access to Public Records Act (“APRA”).

¹ The enclosed supplemental attachment is being delivered via E-gress Switch. Per practice during the COVID-19 emergency period, the Company is not providing a hard copy of this filing. The Company will provide the Commission Clerk with a hard copy and, if needed, additional hard copies at a later date.

The Year-End Report summarizes the gas and electric results, program highlights, and customer experiences during the 2020 Energy Efficiency Program Year. As indicated above, the Year-End Report includes several attachments and schedules which are as follows:

- **Attachment 1** – Electric Summary Table of Year-End Results
- **Attachment 1a** – Electric Costs Schedules
- **Attachment 2** – Gas Summary Table of Year-End Results
- **Attachment 2a** – Gas Costs Schedules
- **Attachment 3** – Case Studies and Evaluation Summaries
- **Attachment 4** – Year-End Participation Memo
- **Attachment 5** – Rhode Island 2020 Energy Efficiency Workforce Analysis Final Report
- **Confidential Vendor Schedule 1 - 2020 Year End Report - Table E-1 - Program Level Cost Breakdown into Subcategories:** A breakout of the electric energy efficiency programs by cost category and sub category, detailing vendor and external entity costs at a program level. (not included in public filing)
- **Confidential Vendor Schedule 2 - 2020 Year End Report - Table G-1 - Program Level Cost Breakdown into Subcategories:** A breakout of the gas energy efficiency programs by cost category and sub category, detailing vendor and external entity costs at a program level. (not included in public filing)
- **Confidential Vendor Schedule 3 - 2020 Rhode Island Energy Efficiency Vendor Costs (Electric and Natural Gas):** A listing of the vendor and external entity costs across both the electric and gas portfolios, broken out by cost category. (not included in public filing)
- **Confidential Vendor Schedule 4 - 2020 Rhode Island Energy Efficiency Vendor Costs >\$1M (Electric and Natural Gas):** A listing of the vendor and external entity costs greater than \$1M across both the electric and gas portfolios in 2020, broken out by cost category, with additional description added of vendor services rendered, and additional vendor details. (not included in public filing)
- **Confidential Vendor Schedule 4a - 2020 Rhode Island Energy Efficiency Vendor Costs >\$1M (Electric):** A listing of the vendor and external entity costs greater than \$1M for the electric portfolio in 2019, broken out by cost category. (not included in public filing)

Luly E. Massaro, Commission Clerk
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May 3, 2021
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- **Confidential Vendor Schedule 4b - 2020 Rhode Island Energy Efficiency Vendor Costs >\$1M (Natural Gas):** A listing of the vendor and external entity costs greater than \$1M for the gas portfolio in 2019, broken out by cost category. (not included in public filing)

Thank you for your attention to this filing. If you have any questions, please do not hesitate to contact me at 401-784-4263.

Sincerely,

A handwritten signature in blue ink, appearing to read "Andrew S. Marcaccio".

Andrew S. Marcaccio

cc: Docket 4979 Service List
John Bell (w/confidential Excel File)

Certificate of Service

I hereby certify that a copy of the cover letter and any materials accompanying this certificate was electronically transmitted to the individuals listed below.

The paper copies of this filing are being hand delivered to the Rhode Island Public Utilities Commission and to the Rhode Island Division of Public Utilities and Carriers.



Joanne M. Scanlon

May 3, 2021
Date

**Docket No. 4979 - National Grid – 2020 Energy Efficiency Plan (EEP)
Service list updated 10/28//2020**

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STATE OF RHODE ISLAND
PUBLIC UTILITIES COMMISSION

IN RE: 2020 ENERGY EFFICIENCY PROGRAM

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Docket No. 4979

**MOTION OF THE NARRAGANSETT ELECTRIC COMPANY D/B/A
NATIONAL GRID FOR PROTECTIVE TREATMENT OF
CONFIDENTIAL INFORMATION**

The Narragansett Electric Company d/b/a National Grid (“National Grid” or the “Company”) hereby respectfully requests that the Public Utilities Commission (“PUC”) grant protection from public disclosure certain confidential information submitted by the Company in the above referenced docket. The reasons for the protective treatment are set forth herein. The Company also requests that, pending entry of that finding, the PUC preliminarily grant the Company’s request for confidential treatment pursuant to 810-RICR-00-00-1.3(H)(2).

The record that is the subject of this Motion that requires protective treatment from public disclosure is an Excel file entitled “Confidential Vendor Schedules 2020” (referred to herein as the “Confidential File”) that was filed by the Company on May 3, 2021 as part of the Company’s 2020 Energy Efficiency Year-End Report (“Year-End Report”). The Confidential File contains the following information:

- **Confidential Vendor Schedule 1 - 2020 Year End Report - Table E-1 - Program Level Cost Breakdown into Subcategories:** A breakout of the electric energy efficiency programs by cost category and sub category, detailing vendor and external entity costs at a program level.
- **Confidential Vendor Schedule 2 - 2020 Year End Report - Table G-1 - Program Level Cost Breakdown into Subcategories:** A breakout of the gas energy efficiency programs by cost category and sub category, detailing vendor and external entity costs at a program level.

- **Confidential Vendor Schedule 3 - 2020 Rhode Island Energy Efficiency Vendor Costs (Electric and Natural Gas):** A listing of the vendor and external entity costs across both the electric and gas portfolios, broken out by cost category.
- **Confidential Vendor Schedule 4 - 2020 Rhode Island Energy Efficiency Vendor Costs >\$1M (Electric and Natural Gas):** A listing of the vendor and external entity costs greater than \$1M across both the electric and gas portfolios in 2020, broken out by cost category, with additional description added of vendor services rendered, and additional vendor details.
- **Confidential Vendor Schedule 4a - 2020 Rhode Island Energy Efficiency Vendor Costs >\$1M (Electric):** A listing of the vendor and external entity costs greater than \$1M for the electric portfolio in 2019, broken out by cost category.
- **Confidential Vendor Schedule 4b - 2020 Rhode Island Energy Efficiency Vendor Costs >\$1M (Natural Gas):** A listing of the vendor and external entity costs greater than \$1M for the gas portfolio in 2019, broken out by cost category.

The Company requests protective treatment of the Confidential File in accordance with 810-RICR-00-00-1.3(H) and R.I. Gen. Laws § 38-2-2-(4)(B).

I. LEGAL STANDARD

For matters before the PUC, a claim for protective treatment of information is governed by the policy underlying the Access to Public Records Act (APRA), R.I. Gen. Laws § 38-2-1 et seq. See 810-RICR-00-00-1.3(H)(1). Under APRA, any record received or maintained by a state or local governmental agency in connection with the transaction of official business is considered public unless such record falls into one of the exemptions specifically identified by APRA. See R.I. Gen. Laws §§ 38-2-3(a) and 38-2-2(4). Therefore, if a record provided to the PUC falls within one of the designated APRA exemptions, the PUC is authorized to deem such record confidential and withhold it from public disclosure.

II. BASIS FOR CONFIDENTIALITY

The Confidential File that is the subject of this Motion is exempt from public disclosure pursuant to R.I. Gen. Laws § 38-2-2(4)(B) as “[t]rade secrets and commercial or financial

information obtained from a person, firm, or corporation that is of a privileged or confidential nature.” *The Attorney General’s Guide to Open Government in Rhode Island 6th Edition*¹ provides guidance as to the scope of R.I. Gen. Laws § 38-2-2(4)(B)’s applicability. It states that:

If a request is made for financial or commercial information that a person is obliged to provide to the government, it is exempt from disclosure if the disclosure is likely either: (1) to impair the government’s ability to obtain information in the future, or (2) to cause substantial harm to the competitive position of the person from whom the information was obtained. If a request is made for financial or commercial information that is provided to the government on a voluntary basis, it is exempt from disclosure if the information “is a kind that would customarily not be released to the public by the person from whom it was obtained.” *The Providence Journal Company v. Convention Center Authority*, 774 A.2d 40 (R.I. 2001).

The Confidential File consists of financial and commercial information. National Grid would customarily not release this information to the public and its submission of the Confidential File stems from PUC Order No. 23937 in which the Commission approved the Energy Efficiency Program Plan for 2020 which, in part, provides that the Company is to file a Year-End Report. Accordingly, National Grid is providing the Confidential File to the PUC to fulfil its regulatory responsibilities in connection with the Year-End Report. Therefore, the Confidential File is exempt from public disclosure “if the disclosure is likely either: (1) to impair the government’s ability to obtain information in the future, or (2) to cause substantial harm to the competitive position of the person from whom the information was obtained.” See *The Attorney General’s Guide to Open Government in Rhode Island 6th Edition*, p. 22.

¹ <http://www.riag.ri.gov/Forms/AGguidetoopengovernment.pdf>

The release of the Confidential File is likely to cause substantial harm to the competitive position of National Grid. The Confidential File includes sensitive information and other commercial details regarding the Company's vendors. Disclosing this information to the public could harm the Company's ability to procure vendors in the most cost-effective manner and, ultimately, harm customers.

III. CONCLUSION

For the foregoing reasons, the Company respectfully requests that the PUC grant this motion for protective treatment of the Confidential File.

Respectfully submitted,

**The Narragansett Electric
Company d/b/a National Grid**

By its attorney,

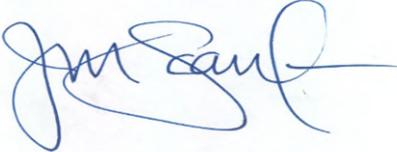


Andrew S. Marcaccio (#8168)
National Grid
280 Melrose Street
Providence, RI 02907
(401) 784-4263

Dated: May 3, 2021

CERTIFICATE OF SERVICE

I hereby certify that on May 3, 2021, I delivered a true copy of the foregoing Motion via electronic mail to the parties on the Service List for Docket No. 4979.



Joanne M. Scanlon

**The Narragansett Electric Company
d/b/a National Grid**

2020 Energy Efficiency Year-End Report

May 3, 2021



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Attachments:

Attachment 1: Electric Summary Tables of Year-End Results

Attachment 1a: Electric Costs Schedules

Attachment 2: Gas Summary Tables of Year-End Results

Attachment 2a: Gas Costs Schedules

Attachment 3: Case Studies and Evaluation Summaries

Attachment 4: Year End Participation Memo

Attachment 5: Rhode Island 2020 Energy Efficiency Workforce Analysis Final Report

Overview

This Year-End report summarizes the gas and electric results, program highlights, and customer experiences during the 2020 Program Year. The electric and gas programs are described more fully in the Settlement of the Parties, filed in Docket No. 4979 on October 15, 2019 and approved by the Rhode Island Public Utilities Commission (PUC) at its open meeting on December 17, 2019.

The primary goal set forth in the 2020 Settlement of Parties was to “create energy and economic cost savings for Rhode Island consumers through energy efficiency.”¹ The charts below summarize the electric and gas program benefit cost ratios, savings and expenditures compared to planned benefit cost ratios, savings goals, and budgets respectively. The benefit cost ratios are far greater than 1, indicating that the Company’s programs created positive value to Rhode Island for every dollar invested in 2020. In total, the 2020 programs will create electric cost savings of \$209.2 million and gas cost savings of \$39.5² million for Rhode Island customers over the life of the installed energy efficiency measures.

In addition to cost savings, the 2020 energy efficiency programs created significant economic benefits to Rhode Island. The programs supported 827.5 full-time equivalent (FTE) workers in 2020. Most of the jobs created as a result of energy efficiency investments were local because they were tied to installation of equipment and other materials. In fact, of the 1,093 companies and agencies involved in National Grid’s 2020 energy efficiency programs, 73% were located in Rhode Island.³ In addition, the 2020 energy efficiency programs will add over \$237.2 million to Rhode Island’s Gross State Product (GSP).

Another goal of the 2020 Plan was to achieve electric and gas savings targets established in the 2020 EE Program Plan, which were consistent with the goals established for 2020 in the 2018-2020 Three Year Least Cost Procurement Plan. The 2020 electric savings target was 178,423 annual MWh. At the end of the year, the Company achieved 157,346 annual MWh energy savings, which represents 88.2% of that goal. The achieved savings equal 2.10% of the referenced 2015 electric load. The Company also had an annual kW savings goal of 29,793 kW, and at the end of the year, it had achieved 23,540 kW savings, which represents 79.0% of that goal.

The 2020 gas savings target was 446,621 annual MMBtu. At year’s end, the Company achieved 318,845 annual MMBtu, which represents 71.4% of that goal. The achieved savings represents 0.78% of the referenced 2015 natural gas load. Detailed savings information can be found in Attachment 1, tables E-1, E-2 and Attachment 2, tables G-1 and G-2.

Neither Rhode Island nor the Company’s energy efficiency programs were spared the impacts from the COVID-19 pandemic. While the Company made many adjustments throughout the year to respond to the impacts of COVID-19, the need to temporarily suspend on-premise energy efficiency services and the overall economic situation for the state resulted in a major impact to the performance of the Rhode Island energy efficiency program.

¹Energy Efficiency Program Plan (EEPP) for 2020, Settlement of the Parties, October 15, 2019, Docket 4979, page 3.

² From Table G-2, Attachment 2, Natural Gas Benefits. Carbon value is embedded in Natural Gas Benefits.

³ Guidehouse, Rhode Island 2020 Energy Efficiency Workforce Analysis Final Report, May 2021. Copy included in Attachment 5.

Additional cost and savings information can be found in Attachment 1, tables E-1 and E-3, and Attachment 2, tables G-1 and G-3.

	2020 Goal/Benchmark ⁴	2020 Actual ⁵	% of Goal
Electric			
Annual MWh Savings	178,423	157,346	88%
Annual kW Savings	29,793	23,540	79%
Lifetime Benefits (\$Mil)	\$598.7	\$533.5	89%
RI Test Benefit/Cost Ratio	4.66	4.76	102%
Gas			
Annual MMBtu	446,621	318,845	71%
Lifetime Benefits (\$Mil)	\$143.4	\$96.7	67%
RI Test Benefit/Cost Ratio	3.29	3.08	94%
	2020 Budget (\$Mil)⁶	2020 Actual (\$Mil)⁷	% of Goal
Electric			
Total Expenditures ⁸	\$111.1	\$91.5	82%
Total Implementation Expenses ⁹	\$106.0	\$88.2	83%
Gas			
Total Expenditures	\$34.3	\$24.9	73%
Total Implementation Expenses	\$32.8	\$24.6	75%

In 2020, National Grid’s energy efficiency programs continued to deliver energy savings for Rhode Island customers while also facing the challenges posed by the global COVID-19 pandemic. Out of an abundance of safety, caution, and concern for the health and well-being of the Company’s vendors and customers, in-home and on-site programs were suspended mid-March and slowly resumed through the second quarter of 2020. Programs successfully implemented strategies developed during the shutdown to continue serving customers, including:

- EnergyWise and Income Eligible Single Family (IES): Virtual Home Energy Assessments (VHEAs) began in early April to allow the program to serve customers on a remote basis. The VHEA is now a standard offering that customers can select for a home energy assessment. Based on the customer’s comfort level, initial assessments can occur either in person at the customer’s home or remotely. At 2020 year-end, 37% of EnergyWise assessments and 47% of IES assessments were VHEAs.

⁴See 2019 EEPP Settlement of the Parties, Docket No. 4888.

⁵Actual savings in 2019.

⁶See 2019 EEPP Settlement of the Parties, Docket No. 4888.

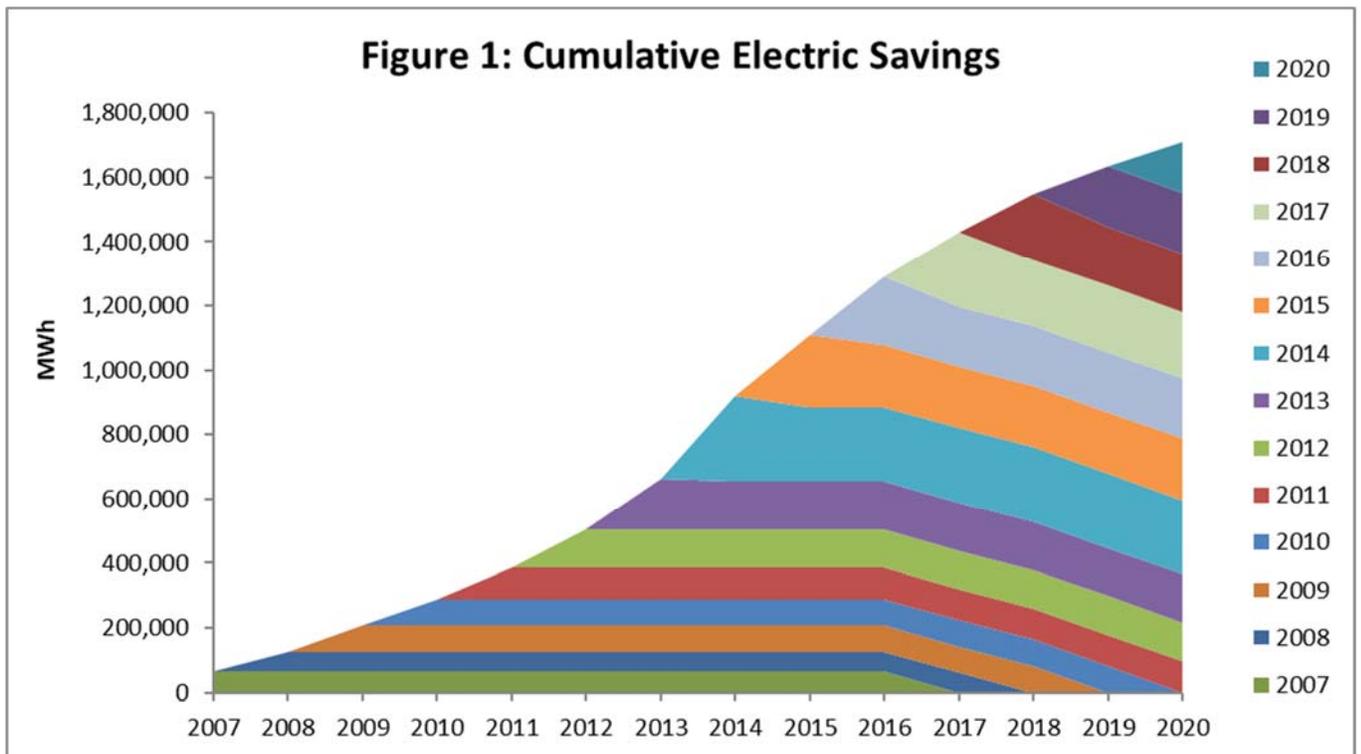
⁷Actual spend in 2019.

⁸Includes implementation costs, EERMC and OER costs, and shareholder incentive.

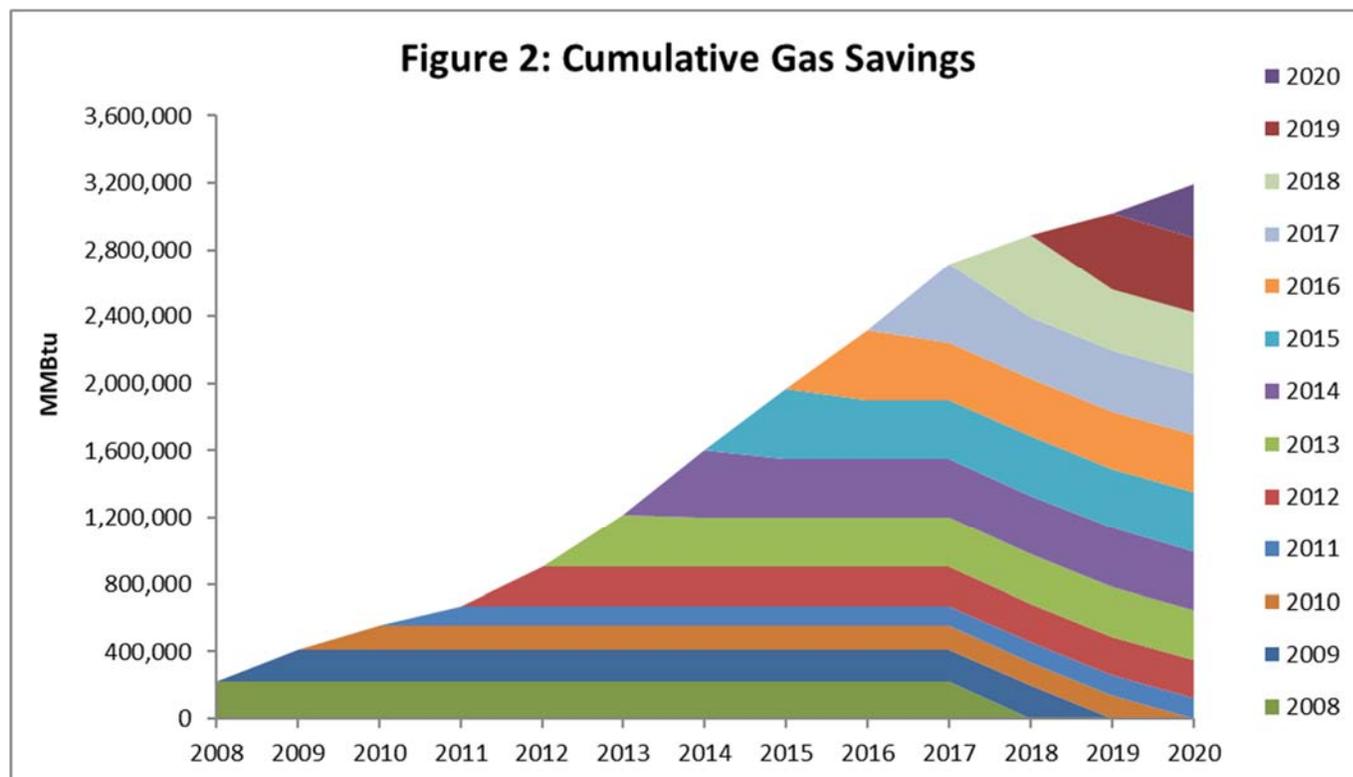
⁹Includes all program-related expenses, i.e. incentives, administration and general expenses, marketing, sales, technical assistance, evaluation, and training. Also includes Finance Costs (which include payments to the Rhode Island Infrastructure Bank (RIIB)) as detailed in Tables E-3 and G-3 in this report.

- EnergyStar HVAC: National Grid developed remote services during COVID-19, including virtual trainings for contractors and technicians to keep them engaged during the normal training season, and virtual inspections to adhere with on-site restrictions and safety measures. The consolidated 4-hour “HVAC Check” session, offered in combination with an online 1-hour airflow video focused on proper ASHP equipment sizing and selection, installation guidelines, integrated control specifications and homeowner education.
- In 2020, National Grid launched new robust, comprehensive marketing campaigns, which drove awareness, interest and participation in the Company’s Energy Efficiency programs. These omni-channel marketing efforts were reflective of the COVID-19 pandemic; messaging focused on affordability, safety and energy saving solutions for customers. Our communication efforts reinforced the financial & energy saving benefits of making upgrades with no-cost virtual assessments, low-cost energy efficient products, and rebates through our energy saving programs. Sentiment and tone were empathetic and helpful as our customers dealt with a new reality.

The energy savings achieved as part of the 2020 Plan provided a meaningful contribution to Rhode Island’s electricity needs. Since 2007, energy efficiency has saved over 11.9 million MWh at a cost lower than the cost of supply. As shown in Figure 1 below, these savings accumulate over the average ten-year lifetime of the installed measures. The only exception is the savings from Home Energy Reports. This program only has a one-year measure life and is counted as such in Figure 1. At the end of 2020, the cumulative energy savings met 19% of Rhode Island’s electric load.



Since 2008, natural gas energy efficiency programs have also created significant cumulative savings. From 2008 to 2020, over 21.6 million MMBTUs of natural gas were saved.



To achieve the 2020 energy savings goals, the Company focused on four strategies initially introduced in the 2018-2020 Energy Efficiency and System Reliability Procurement Plan (Three-Year Plan) in Docket 4684. Below are highlights from the implementation of these four strategies. Details on these strategies, other programs, and initiatives are found in subsequent sections of this Year-End Report.

The first strategy was focused on the “Customer.” By focusing first and foremost on the needs of the customer in all segments, the Company sought to provide services that would enable customers to control their energy usage, reduce their bills, and help support their financial well-being. On the Commercial side, the Company’s New Construction program is focused on addressing energy efficiency in the concept or early stages of the project to maximize the energy savings. Examples of this can be seen in the Accelerated Performance initiative. Although the initiative was launched in 2018, the Company continues to build off its success and engage developers and building owners early in the project process by establishing Energy Use Intensity goals before a request for proposal was issued to a design team. This proactive approach to energy efficiency enabled deeper savings for new construction projects.

The second strategy was “Least Cost”, which seeks to deliver energy efficiency services as cost-effectively as possible through optimizing finance and promoting upstream initiatives. Examples of promoting cost efficiency included leveraging numerous financial tools including On Bill Repayment (OBR), Heat Loans, the Efficient Building Fund (EBF), taking advantage of LEDs below \$1/bulb, and enhancing code trainings. Blending a focus on the customer with the strategic focus on delivering services as cost efficiently as

possible, the Company also worked with the Capital Good Fund (CGF) which provides financing to customers with less than perfect credit. In 2020, there were 684 loans processed totaling approximately \$5.6 million in project costs.

The third strategy was focusing on the “Environment.” Maximizing energy efficiency savings provides the greatest contribution to reducing Rhode Island’s greenhouse gas emissions and contributing to the State’s clean energy policy goals. As a part of these efforts, there were several actions taken in 2020 which contributed to greenhouse gas reductions. In the Residential New Construction program, 2020 continued to see a higher than planned number of non-gas heated homes with 68% electric and 19% gas compared to 7% electric and 84% gas only five years ago in 2015. In total, the electricity, delivered fuel, propane, and natural gas savings delivered by the 2020 Plan save over 803,821 tons of carbon over the life of the installed measures.

“Innovation” was the final strategy pursued in 2020. Continually innovating to capture energy efficiency savings from new technologies and program process improvements is critical to the long-term sustainability of the Company’s nation-leading energy efficiency programs. As such, the Company pursued several areas to pave the way for future energy savings while seeking integration with energy efficiency, demand response, and renewable energy. In 2020, the Residential New Construction Program supported the completion of the State’s first Passive House affordable housing development, Sheridan Small Homes, was built. The project was designed by Rhode Island School of Design (RISD) students and ONE Neighborhood Builders and was highlighted as a national case study as a prototype for Passive House housing units infill areas.

The following sections in this report outline the different programs and initiatives that comprised the 2020 Rhode Island Energy Efficiency Electric and Gas Portfolios and focuses on many of the highlights therein.

Residential Programs

Overview

In 2020, the residential sector was cost-effective with RI Test benefit cost (B/C) ratios of 3.06 for electric programs and 2.13 for gas programs. The Company spent 82% of the electric residential implementation budget, achieved 99% of electric targeted annual energy savings, and achieved 102% of electric targeted annual demand savings. The Company spent 96% of the gas residential implementation budget and achieved 84% of gas targeted annual energy savings. Additional details on spending and savings by program can be found in Attachment 1, tables E-1, E-2, E-3 and Attachment 2, tables G-1, G-2 and G-3.

EnergyWise

EnergyWise is a direct-to-customer in-home program that educates residents on how their home can become more energy efficient. This program works with single family customers of one-to-four-unit buildings in a two-pronged approach. During the initial visit, known as the home energy assessment, energy specialists spend two-to-three hours educating the customer about their home's performance. A comprehensive, whole-house approach is taken where the major energy components of a home are assessed for age and performance and the interactions between systems are explained. Rhode Island customers benefit from two-person assessments. During the assessment, one energy specialist focuses on upgrading instant-savings opportunities such as installation of energy efficient lighting, pipe insulation, efficient water savings devices, and advanced power strips. The second energy specialist works with the customer to learn about the customer's concerns with their home such as high energy usage, drafty areas, or cold rooms. The energy specialist and customer walk through the home identifying opportunities to improve the systems (heating, water heating, and appliances) and building envelope, the exterior structure of the residence where air leakage can occur and educates them on how energy efficiency upgrades can improve household comfort while providing savings on energy bills. Information about the home's heating fuel source, age of systems, solar system feasibility, and central air conditioning with smart thermostat controls or opportunities for smart thermostat controls are captured to provide opportunities for other efficiency programs. At the completion of the assessment, the customer receives an Energy Action Plan that indicates additional energy savings opportunities and any incentives or financing that are available towards the energy efficiency upgrades. The two-person team minimizes the length of time at the customer home with a dedicated specialist focused on answering a customer's questions and educating them about their home's energy use.

Customers that proceed to the next phase of *EnergyWise* receive weatherization upgrades. These improvements seal areas where unconditioned air leaks into the home and conditioned air leaks out, and increase insulation in the walls, attic, and basement areas as needed. Weatherization brings a noticeable difference in the comfort level of a customer's home if the residence was previously drafty or lacking in insulation. This upgrade also provides efficiency savings for the next twenty years regardless of who occupies the residence. Homeowners that complete weatherization upgrades improve comfort while saving money on energy costs.

Overview of Performance

2020 provided an unconventional operating environment for the EnergyWise program. COVID-19 concerns resulted in a full-stop of the program in mid-March with in-person work resuming in June. During March – June, a regional consortium of energy efficiency program administrators serving the states of RI, CT, MA, and NH, engaged online trainings for the weatherization and heating system contractor employees to update or meet Building Performance Institute credentials and continuing education requirements. The Company also worked collaboratively with the same consortium to develop protocols, minimum personal protective equipment (PPE) requirements, training, and implementation plans for contractors to return to work on energy efficiency programs. A third-party environmental health and safety engineering firm was engaged to develop the protocols that have successfully minimized COVID exposure to customers and contract employees. Different tiers of PPE were required depending on the extent of interaction with customers and the public.

Also, during March and April, a new virtual home energy assessment (VHEA) was designed and implemented to provide a remote first-visit experience for customers. Immediate energy savings items identified during the VHEA such as lighting, smart strips, and water savings fixtures were mailed directly to customers. Over 9,950 customers received home energy assessments and 3,679 customers proceeded with weatherization. 576 customers financed energy efficiency upgrades with the 0% Heat Loan totaling \$4.35 million in improvements.

Highlights

In 2020, EnergyWise was awarded the Sustained Excellence, ENERGY STAR® Partner of the Year award for Energy Efficiency Program Delivery by the U.S. Environmental Protection Agency and the Department of Energy for the fourth consecutive year. Twenty Independent Insulation Contractors also received the Century Club Award from ENERGY STAR® for completing 100 or more weatherization projects during 2019. Rhode Island is a recognized leader in protecting the environment through energy efficiency and for the outstanding quality control process that customers receive in Rhode Island.

In 2020, the program also had the following enhancements:

- 100% weatherization incentives up to \$15,000 per customer for all EnergyWise customers in support of furloughed workers that were not able to engage in on premise activities from March – June. The enhanced incentive ensured that when work resumed in customers' homes, there would be a robust pipeline available. During March and April of 2020, there were concerns voiced from insulation contractors about losing workforce to other industries. Employees that were furloughed found employment opportunities in construction and Amazon warehouses as just a couple of the alternative employees that remained operational during the pandemic.
- Virtual Home Energy Assessments (VHEAs) began in early April to allow the program to serve customers on a remote basis with virtual home energy assessments. The VHEA is now a standard offering that customers can select for a home energy assessment. Based on the customer's comfort level, initial assessments can occur either in person at the customer's home or remotely. At year-end, over 37% of EnergyWise assessments were VHEAs.

- Innovative marketing campaigns met customers during remote and shelter-at-home time periods. With recreational opportunities limited, EnergyWise took advantage of drive-in movie promotions to educate customers about the program. Campaigns were also implemented via OTT (over-the-top) and CTV (connected TV) placements. Think of this as the adds that begin before HULU and other streaming programming. There were also email campaigns that went out to customers with arrearages encouraging them to take advantage of the 100% weatherization incentive as an option to reduce energy costs.
- The EnergyWise Single Family (EWSF) Process Evaluation found that the program is performing at a high level. Participants expressed satisfaction with the EWSF program (91%), saying that they had a positive experience “from start to finish” and stakeholders appreciate how well the program is managed and delivered to customers.
- In an effort to communicate the 100% weatherization incentive for landlords, the program participated in two webinars in 2020. They included:
 - A webinar by Providence Housing Authority targeting real estate owners and landlords
 - A webinar hosted by URI entitled Barriers to Energy Efficiency in Rental and Affordable Housing

ENERGY STAR® Lighting

The successful transformation of the Rhode Island residential lighting market has been supported by the efforts of Rhode Island’s ENERGY STAR® Lighting Program. Since 2017, when the program exclusively provided incentives to light emitting diode (LED) technology, Rhode Island customers have responded positively by purchasing these bulbs in high volume from retailers, via flash sale promotions, at a pop-up retailer, and through other specialized channels such as direct sales with students in the School Fundraiser campaigns or through receiving free bulbs at local food banks. The program, in conjunction with the ENERGY STAR Appliances program, provides considerable retailer support with training of qualified products, in-store education events for customers, retailer verification of program signage, and online training of products and promotions. The majority of lighting products in 2020 were sold at Rhode Island retailers through upstream buydowns between lighting manufacturers and the retailer that lower shelf prices for customers. The Lighting Program’s goal to provide affordable and accessible efficient lighting is paired with providing education so consumers select a lighting product that meets their needs and expectations.

Overview of Performance

In 2020, the program focused on marketplace promotions for lighting as well as local retailer support and promoted short-term lighting promotions that were available at local stores. The ENERGY STAR® Lighting program achieved 96% of the savings goal while reaching over 328,000 participants.

Highlights

The ENERGY STAR lighting program had strong 2020 savings. With more people working and attending school from home, energy savings and proper task lighting contributed to the success of this program.

- School fundraiser campaigns paused in March with students moving to online learning. Fundraiser campaigns were moved online in September.
- In the third quarter, the program partnered with Providence and Woonsocket high schools to provide back-to-school energy efficiency kits for students, including a desk lamp and advanced power strip as well as additional information about other energy efficiency programs. These schools were selected due to the high number of students on the free school lunch program. Other school districts were also approached but did not complete the memorandum of understanding for participation.

ENERGY STAR® Appliances

In 2020, the ENERGY STAR® Appliances (also referred to as Residential Consumer Products) program focused on efficient dehumidifiers, dryers, room air cleaners, room air conditioners, pool pumps, advanced power strips, refrigerator and freezer recycling, dehumidifier recycling, Low-E storm windows, and efficient shower heads. This program works in tandem with ENERGY STAR® Lighting by leveraging resources with in-store retailer visits and social media campaigns when appropriate. An online training platform is used within this program and ENERGY STAR Lighting to train retail sales staff about products and functions as a critical resource for retailers when there are numerous products and features associated with different appliances.

Overview of Performance

The ENERGY STAR® Appliances program reached 84% of its savings goal while serving over 6,800 participants.

Highlights

The ENERGY STAR® Appliances program had a successful year with strong performance in dehumidifier incentives and recycling, dryer, room air cleaners, room air conditioner, and Tier 2 advanced power strip incentives, and the mid-stream pool pump initiative. Flash sales of advanced power strips, dehumidifiers, and room air cleaners performed well as customers purchased appliances that would make their homes healthier and more energy efficient.

In 2020 the program also had the following enhancements:

- Developed a contactless pick-up of refrigerators and freezers in response to COVID-19 social distancing.
- Enhanced incentive for refrigerator recycling. With more people cooking meals at home as well as a concern about food scarcity, customers were purchasing new refrigerators but keeping their older refrigerator as extra storage. The enhanced incentive of \$125 was implemented to encourage recycling of older refrigerators.
- National Grid won two Responsible Appliance Disposal awards through US EPA for refrigerator recycling program. National Grid has been awarded the RAD Champion and RAD Program Growth awards. The RAD Champion award recognizes the top 10 partners with the highest number of units processed with foam recovery. In 2019, National Grid processed 23,628 units with foam recovery. Since becoming a RAD Partner in 2011, National Grid has processed 165,574 units. That

has reduced carbon dioxide emissions equivalent to those from 126,685 homes' energy use for one year. The Program Growth Award recognizes the top 3 partners to achieve the greatest percent increase in the number of units processed compared to the previous reporting year. In 2019, National Grid processed 29,221 units – that is a 109% increase from 2018.

- Moved Low-E storm window implementation to an online model and promoted the offering through browser search results and other online means.

Home Energy Reports

In its eighth year running, the Rhode Island Home Energy Reports (HER) program continues to encourage energy efficiency behavior through personalized print and email reports, and a seamlessly integrated website. Each of the communication channels displays energy consumption patterns and contains a normative comparison to similarly sized and similarly heated homes, as well as to an energy reduction goal for each customer. 312,120 Rhode Island customers received reports in 2020.

Overview of Performance

In 2020, the HER program saved customers 26,345 MWh and 103,159 MMBtu, reaching 113% and 89% of the company's electric and gas annual energy goals, respectively. The reports not only provide valuable energy efficiency savings tips, but also brings awareness to other energy efficiency offerings.

Highlights

In 2020, Rhode Island continued to be a leader in behavioral energy efficiency innovation and customer engagement. Following are some of the activities for 2020.

- Home Energy Reports paused for two weeks in response to COVID-19.
- Neighbor comparison removed from HER from March – July. With all the changes to customers' lifestyles and energy consumption, a decision was made to pause this component of the HER.
- HER messaging was updated to include COVID messaging within the personal tracker, FAQs for COVID, and COVID marketing modules. Non-COVID friendly tips were suppressed from March through the end of 2020.
- In February email HERs promoted heat pumps with different messaging based on customer segments. The promotion results in higher page views.
- Solar customers received updated neighbor comparisons and marketing modules that pertained specifically to solar customers.

Residential New Construction

The Rhode Island Residential New Construction (RNC) program benefits new construction and major renovation of single-family and multi-family homes for market rate and income eligible customers. The program elements include a HERS (Home Energy Rating System) rating, energy modeling & design assistance, in-field technical assistance, insulation and air sealing inspections, building performance testing, educational outreach, energy performance-based incentives, complimentary ENERGY STAR® bulbs and WaterSense® showerheads, optional ENERGY STAR® Homes verification, and support for

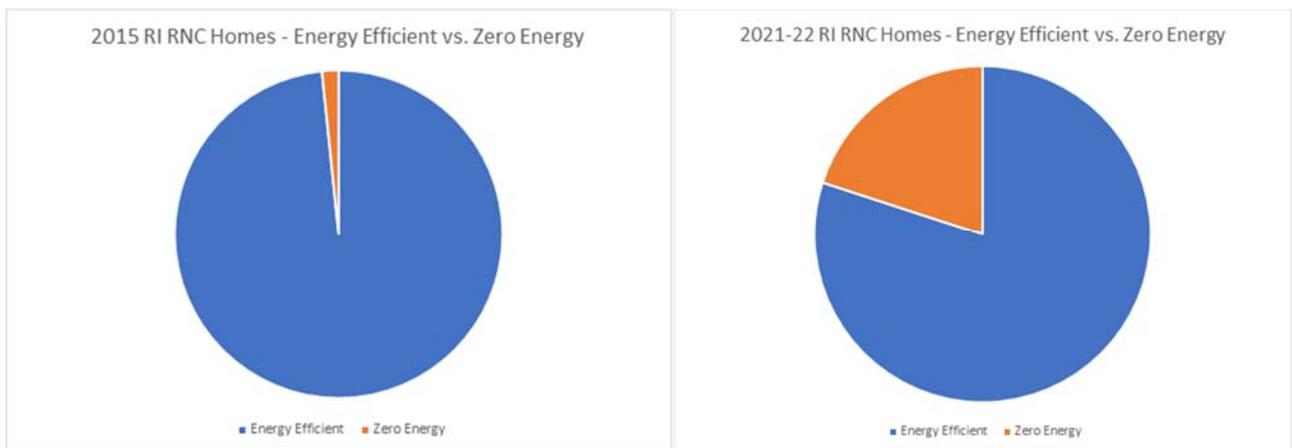
projects seeking additional certifications such as DOE Zero Energy Ready, Passive House/PHIUS, LEED-H, and Living Building Challenge.

Overview of Performance

The 2020 RNC program achieved 90% of its electric savings goal and 71% of its gas savings goal by completing work on 482 homes. The program’s underperformance is primarily attributable to COVID-19. While construction was deemed essential and never shut down, RNC field verification was suspended from mid-March to mid-June. Since on-site inspections to verify the home’s efficiency levels could not be performed, homes that required these inspections during this period were ineligible for RNC participation and incentives. The program’s stronger performance in electric savings can be attributed to the continued market shift toward electrically heated homes: of the new construction/gut rehab RNC projects completed in 2020, 68% installed electric heat and only 19% installed gas heat. This trend of the market shifting to electric heat is shown in the charts below.



As in previous years, roughly one third of RNC projects completed in 2020 were in the affordable housing sector. About 90% of the units completed in 2020 were ground-up new construction or gut rehabs while the remainder were renovations. 56% of projects were single-family homes and the remainder were multi-family. In addition, RNC provided envelope improvements for 211 master-metered gas renovation affordable housing units receiving equipment rebates through EnergyWise in 2020.



In 2020, RNC offered a new High Efficiency Electric Homes incentive that provided an additional \$1,000 per unit for 1-4 unit buildings, and \$500 per unit for 5+ unit buildings that were high efficiency all-electric (fossil-fuel-free) homes with approved, and accurately sized, heating and cooling equipment. Program trends continue to demonstrate market transformation as shown in the charts below, with the zero-energy home share of the RNC 2021-2022 pipeline growing to 25% from 2% in 2015.

Highlights

Several projects supported by RNC this year were “firsts” for the state, or will be, once complete:

- RI’s first zero-energy ready neighborhood was completed. Five of the nine units were officially certified, with the remaining four to be completed in early 2021.
- RI’s first Passive House affordable housing development was built. The five-home development was designed by Rhode Island School of Design (RISD) students, provided workforce development by leveraging apprentice builders during construction, and has been highlighted as a national case study.



- The conversion of a late 1800s mill building into a 45-unit apartment community became the first project to use the program’s innovative Adaptive Reuse offering tailored to this type of construction





- Looking ahead, work also began on both RI's first large Passive House designed apartment building and RI's first Passive House renovation project.

High Efficiency “HVAC” (Electric and Gas) - Heating, Cooling and Hot Water

The Residential High-Efficiency Gas and Electric Heating, Cooling, and Water Heating Programs promote the installation of high-efficiency equipment for gas and electric space heating and cooling, water heating, and controls via tiered customer rebates. The Programs provide contractor training and incentives to ensure best practices are established, and followed, for proper design of distribution system improvements, equipment sizing and quality installation.¹⁰ Energy efficient heating, cooling and hot water equipment must be installed by a licensed heating contractor or plumber to allow a customer to be eligible for the incentive. Customers receive incentives for the installation of equipment that meets the high efficiency requirements.

Overview of Performance

In 2020, the High-Efficiency Heating, Cooling and Hot Water Programs saved customers 3,101 net annual MWh and 23,974 net annual MMBtu, reaching 139% and 80% of the company's electric and gas goals, respectively. Over 5,900 Rhode Island customers participated in the High-Efficiency Heating and Cooling Program (also referred to as the EnergyStar HVAC program) in 2020.

The program's lead vendor maintained strong relationships throughout the year with trade allies and distributors. Field and outreach support, as well as contractor trainings, were offered to expand on efforts to promote quality installation best practices. In 2020, COVID-19 restrictions resulted in cancelling classroom sessions, but the program quickly pivoted to online webinars as an alternative.

Highlights

- The Annual RI Trade Ally Heating and Cooling Meetings continued to have strong participation with approximately 100 attendees.
- Contractors continued to receive incentives for accurate installation, tune up, duct sealing, accurately down-sizing new air conditioning or central heat pump equipment, and training and tool reimbursement based on passing required program testing.

¹⁰ Residential programs do not promote or fund fuel switching. It is only after a customer decides to switch to natural gas that they are eligible for an energy efficiency rebate. At the time the customer switches from another fuel to natural gas, they become eligible for an energy efficiency incentive that covers part of the incremental cost of higher efficiency gas equipment.

- The consolidated 4-hour “HVAC Check” session, offered in combination with an online 1-hour airflow video focused on proper ASHP equipment sizing and selection, installation guidelines, integrated control specifications and homeowner education. Successful completion of the training allows the contractors to get certified in AC Check and Mini Split Check and be listed on the Approved Contractor list¹¹. Training classes were offered at various locations around the state and remote due to Covid-19.

Training Type	# of Sessions	# of Approved Contractors
HVAC Check or MS Check	14	74

- The RI Residential New Construction/Major Renovation Program promoted technical and Energy Code trainings through the HVAC Program to inform contractors of the market’s transformation and provide training on technical requirements to achieve incentives. Emphasis was placed on how the market, within the last five years, has become dominated by electrically heated homes and the increase in Zero-net energy and Passive House projects.
- 89 HVAC or MS check tests completed
- 162 onsite Quality Control (QC) inspections were completed.
 - A no-contact heat pump QC inspection and testing protocol was implemented to provide required COVID-19 distancing requirements where the customer stays inside and modulates settings and the contractor or QC inspector conducts testing/adjustments at the outdoor unit.
- The gas heating program continued to see a strong consumer purchase of the energy-efficient combination boiler/hot water systems (1,100 systems) verses a much lower purchase of the stand-alone energy efficient boilers (236).
- The Company launched the Gas HVAC Enhanced Incentive for emergency replacement of eligible natural gas heating and water heating equipment during the challenging COVID-19 pandemic.
 - 37 distributor or contractor meetings were held to promote the Gas HVAC Enhanced Incentive.
- In 2020, National Grid continued to offer an enhanced rebate for energy-efficient central and mini-split heat pumps installed in qualifying homes that heat primarily with electric resistance. This measure requires a completed EnergyWise assessment and completed weatherization measures to ensure the thermal envelope is fully insulated and air-sealed so the ASHP can operate efficiently. Customers were also able to apply for 0% financing for up to \$15k over 7 years through the Heat Loan program to help offset the cost of the ASHP system.
- National Grid Marketplace (Ngrid.com/shop) was updated to include instant rebates on smart thermostats and water saving devices.

¹¹ <https://www.nationalgridus.com/media/pdfs/resi-ways-to-save/rhode-island-electric-mshp-contractors.pdf>

- 0% financing loans for approved electric and gas HVAC equipment support customers' ability to move forward with energy efficiency upgrades remained available in 2020.
 - 79 heat loans closed in 2020 totaling \$815K (average \$10K/loan)
- 94 distributor visits were conducted in 2020 (in-person/virtual) to provide ongoing communication about the HVAC Program.

Multifamily

The Rhode Island Multifamily Retrofit program serves market rate and income eligible gas and electric customers as well as commercial gas customers.

Overview of Performance

The Market Rate Multifamily Retrofit program achieved 60% of the electric goal and 37% of the gas goal. The Income Eligible Multifamily Retrofit program achieved 23% of the electric goal and 41% of the gas goal. The C&I Multifamily Gas program achieved 14% of goal.

Overall, the multifamily program was greatly impacted by the pandemic in 2020. During the months that onsite services were suspended there were limited opportunities engage with customers and build a pipeline of work. Once Health and Safety protocols were in place and onsite services could resume, the program still faced many unique challenges due to the pandemic including equipment shortages, hesitancy among property owners to have contractors onsite and in dwelling units, and reluctance to make capital investments due to unprecedented rent collection issues.

Despite these challenges, the market rate electric program performed relatively well, which was due to excellent lighting opportunities with several large apartment buildings under one property manager. This property management group worked collaboratively with our vendor to complete in-unit measures during their own maintenance visits, which helped to limit onsite visits and limit residents' exposure to onsite workers.

Highlights

- Adaption to virtual services: Although the multifamily program did not implement full virtual assessments due to the complexity of multifamily buildings, our vendor was able to incorporate more virtual work, including virtual inspections and some hybrid virtual assessments. These changes minimized onsite visits and resulted in greater program efficiencies without affecting the quality of services.
- Successful re-engagement of previously assessed customers: While onsite services were on hold, the Company's vendor re-engaged with customers who previously had assessments of their property, but chose not to move forward with all or some of the proposed measures. There was some success with this effort in market rate and great success in Income eligible with a few housing authorities. Most notably Pawtucket Housing Authority decided to move forward with air source heat pumps in most of their facilities. These are large projects which will be completed over the next few years.

Residential Connected Solutions

Connected Solutions is National Grid's demand reduction program that uses electric active demand reduction strategies to reduce peak electrical demand periods throughout the year. Consumers with eligible controllable equipment can enroll to participate in active demand reduction.

Overview of Performance

Thermostats:

In 2020 over 3,500 residential thermostats were enrolled in this program. The thermostat component pre-cools the customers' home before the grid peak and then sets back the thermostat setting during peak periods. This lowers the chance of customers' central air conditioning units running during grid peaks. A customer may opt out of the program or events at any time. Customers receive an initial enrollment incentive and an annual incentive for staying in the program. Over the course of 13 events in the summer of 2020, thermostat customers delivered an average of 3.9MW of active demand response curtailment.

Batteries:

This is the second year the Company has offered a residential battery-enabled demand response program and 52 customers enrolled in time to participate in the summer of 2020's events. The customers' batteries are set to discharge during peak times, reducing load on the grid. Incentives are paid based on the performance of their batteries during peak events. The performance-based approach incentivizes customers and vendors to design, install, and maintain systems that can maximize their discharge for a 2 to 3-hour duration demand response events. Batteries experienced 34 events in the summer of 2020 and delivered an average 0.2MW of demand response per event.

Rhode Island Energy Innovation Hub

The Energy Innovation Hub (Hub) is a community engagement destination designed to provide a hands-on opportunity for customers to learn about energy efficiency, renewable technologies, electric vehicles, state energy goals, and a vision for a clean energy future. The Hub content, and knowledgeable staff and energy interns, provide information to customers to empower them to take action to reduce their energy use, adopt smart technologies and learn about renewable power and electric vehicles. The space and its exhibits showcase: (a) energy solutions accessible to all customers; (b) innovative advancements for system reliability; and (c) a vision of a sustainable energy future. Visitors learn about technologies available to create smart, energy-efficient homes and businesses, renewable technologies, demand response, electric vehicles, storm management, and core services that the Company provides. In 2020, the Energy Innovation Hub hosted 88 in-person visitors and 96 virtual visitors.

In 2020 during the COVID-19 pandemic, the Company worked to remain relevant in the communities that our Hub serves by updating our pathways for communication. By utilizing newsletters, social media, virtual presentations, and personal networks, the Company has created a more expansive platform for its messaging, hosting 106 customers via virtual presentations, and countless others via other electronic means. With an updated web presence, virtual connections will be more accessible than ever. In the

future, the Company will pair these new means of outreach with safe in-person programs at the Hub to maintain a comprehensive and effective strategy for building interaction between customers and the Hub network.

Residential Energy Efficiency Education Programs

In 2020, National Grid supported two trainings with the National Energy Education Development (NEED) Project. A summary of the trainings follows.

nationalgrid

NEED Project

2020 Rhode Island Workshop Data

IMPACT

At least **5,346** students expected to be reached

34 workshop attendees

Workshop attendees from **16** different schools across **9** cities

Workshop attendees' school location

WORKSHOP DATES

3/4/20 · In person - Providence, RI
11/16/20 · Virtual

WORKSHOP HIGHLIGHTS

3/4/20

- > 22 participants and 22 evaluation responses
- > At least 3,820 students expected to be reached utilizing curriculum and materials presented at the workshop
- > Majority of attendees teach grades 6-8 (91%)
- > 100% agree the curriculum is grade level appropriate
- > 100% agree the workshop increased their energy knowledge and will allow them to increase their students' energy knowledge
- > 100% will recommend this workshop and NEED materials to others

11/16/20

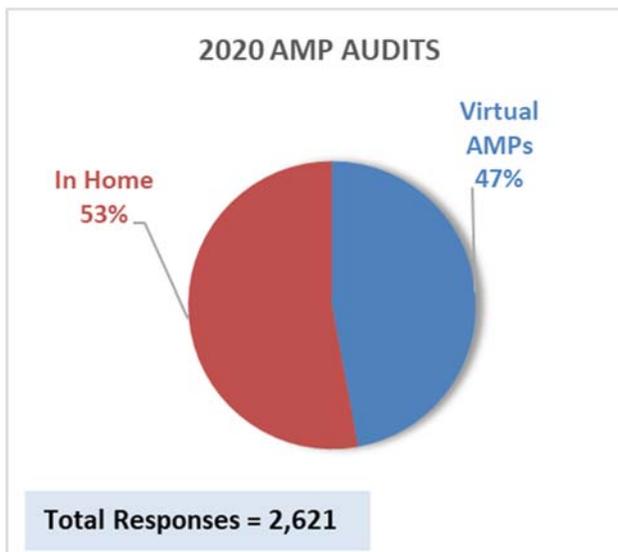
- > 12 participants and evaluation responses
- > At least 1,526 students expected to be reached utilizing materials provided from the virtual workshop
- > Majority of attendees teach grades 6-8 (75%)
- > 100% agree the curriculum is grade level appropriate
- > 100% agree the workshop increased their energy knowledge and will allow them to increase their students' energy knowledge
- > 100% will recommend this workshop and NEED materials to others
- > Energy-themed posttest scores reflect a 67% increase in knowledge gain

Income Eligible Services

The Income Eligible Services (IES) program helps reduce electricity and heating costs for residential income eligible customers without any financial obligation from the customer. Income Eligible Services are delivered by Rhode Island’s six local Community Action Program (CAPs) agencies. The IES Program serves the following customers: homeowners and renters who live in a 1 – 4 dwelling unit building that is heated with electricity, natural gas, oil, propane, wood or coal; have a household income equal to, or less than, 60% of Rhode Island's State Area Median Income (AMI) levels which are set each program year or enrolled in National Grid’s fuel discount rate plans, Electric A-60 rate and/or Gas 11, 13 rates; and customers enrolled in the Low-Income Home Energy Assistance Program (LIHEAP) , also known as “fuel assistance. Services offered to Income Eligible Customers include (1) an energy assessment of their home including behavior, lighting and appliances to determine baseline energy consumption, and if deemed necessary, replacement of inefficient or unsafe appliances (2) an inspection of existing insulation to identify opportunities for weatherization, and (3) a safety and energy efficiency inspection of the customer’s heating/cooling system and if deemed necessary, replacement of inefficient or unsafe heating systems. All customers receive all services and equipment upgrades at no cost.

Overview of Performance

In 2020, the IES program conducted nearly 2,621 energy assessments – 53% in-home, and 47% virtual assessments due to COVID-19 restrictions. Overall, in 2020, IES achieved 54% of the electric savings goal and 31% of the gas savings goal. 2020 savings were lower than expected due to COVID-19 restrictions and precautions for in-home visits, reductions in – or availability of – CAP staffing and appliance shortages.



The IES Program quickly adjusted to the COVID-19 challenges and pivoted to a virtual assessment that created a pipeline of work for when it was safe to go into homes to do the work. Other solutions were implemented such as front-door appliance delivery; however, few customers had the ability to move the appliance inside and install the unit. And as a result of delayed shipping of product from international locations, a nationwide appliance shortage including refrigerators and air conditioners, left many homes with unfilled replacement needs which directly impacted 2020 savings values.

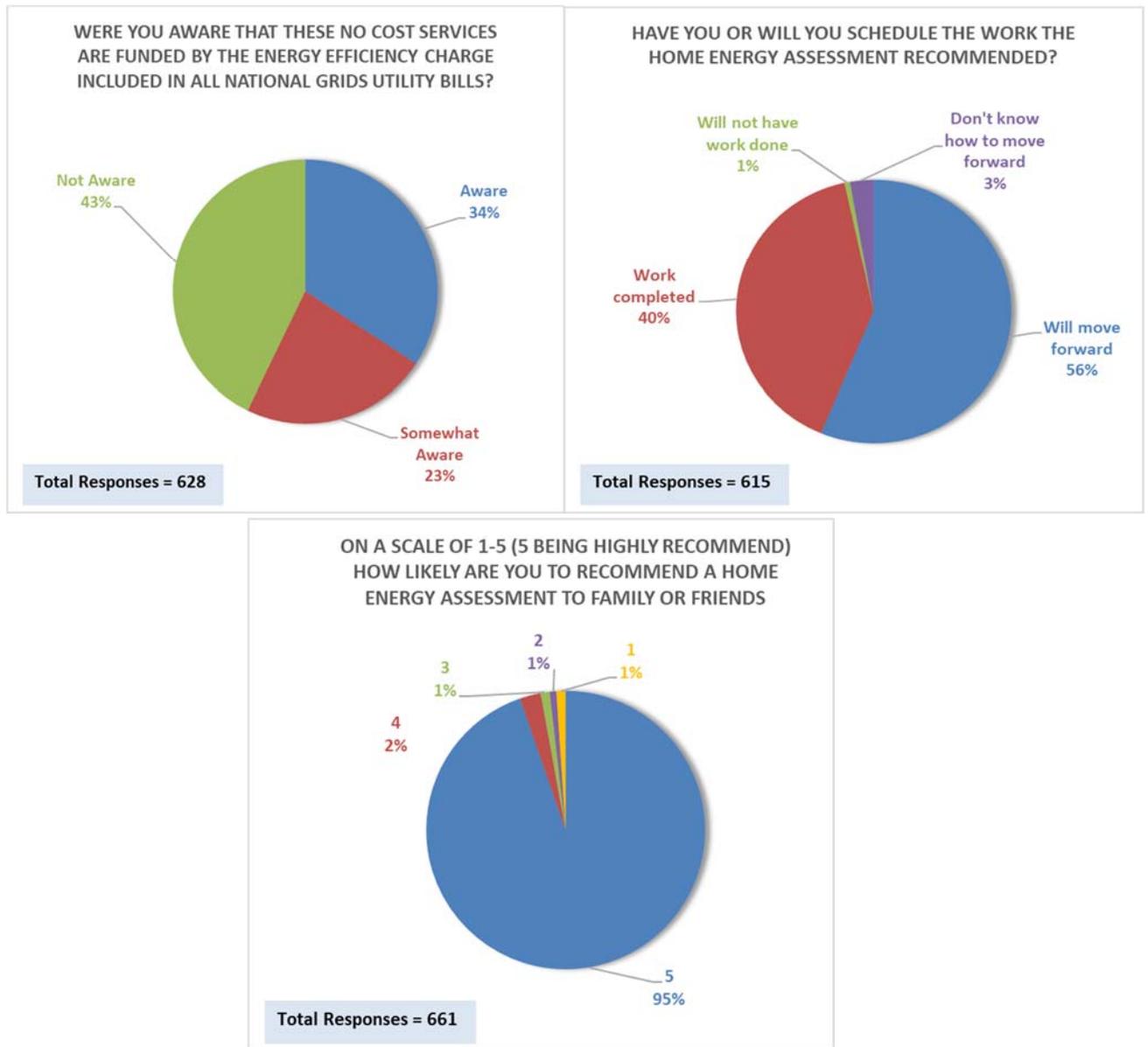
New in 2020, the IES Program initiated a Referral Program to allow CAPs to refer weatherization jobs to a third-party to complete the work. The Referral Program is intended to support the CAPs in managing their pipeline of weatherization jobs. The Referral Program began in mid-October 2020 with training and process development continuing through November.

Continuing from 2019, the IES offered replacement of electric resistance heating systems with high-efficiency Cold Climate Air Source Heat Pump heating solutions to help customers save money on their utility bills; of which six jobs were completed.

Progress was continued throughout 2020 on the recommendations set forth in the Income Eligible Process Evaluation.

- A non-SWS assessment process, developed with the Program’s collaborative partners, was designed to reduce the audit and data entry time significantly while capturing the necessary data via a standardized approach.
- The Hancock Mobile application is complete and was in testing before the pandemic. This tool is customized for the National Grid non-SWS assessment process described above and is intended to save substantial time on each audit and reduce time-consuming errors.
- The first KPI meetings were held in November 2020 in alignment with the new assessment process. By standardizing the assessment across the state and communicating results consistently, the IES Program will develop consistent timelines and communication with all stakeholders.
- The new assessment process will increase the equity of job distribution across the state. The third-party referral program and the use of contracted audit staff will decrease the installation timeline. Local BPI training will get more auditors into the program more quickly.
- A new post installation survey process for weatherization, heating systems replacements and the AMP assessment was fully implemented in 2020. Respondents overwhelmingly appreciate the professionalism of the IES staff and the energy efficient measures that were installed. Feedback is now being received. See Post Installation Survey Graphs below.
- Direct engagement with landlords was delayed in 2020 because of COVID-19.
- To improve the stability of the CAPs’ assessor capacity, a complete review of assessor tasks, compensation, training and equitable opportunities for advancement was undertaken in 2020. Workforce development and training continued to be a focus in 2020 but unfortunately was met with limitations due to COVID-19.
- The waiver process was updated and reflected in the latest version of the Operations Manual. This allows Weatherization Directors access to, and responsibility for, the review of waivers.
- Data collection was an ongoing effort in 2020 and the new assessment process will serve as an effective tool for the collection of necessary data.

Post Installation Survey Graphs



Income Eligible Program/WAP Collaborative

National Grid's Income Eligible Services are administered along with related and complementary federal, state, and local programs in collaboration with Rhode Island Department of Human Services (DHS), the CAP agencies, and other local agencies. The alignment of IES with these programs allows a leveraging of funds to provide energy services to income eligible customers in Rhode Island. The leveraging of funds, and coordination between the programs listed below, allows more customers to receive comprehensive energy assessments of appliances, weatherization, and heating system replacements.

- **Low Income Home Energy Assistance Program (LIHEAP).** The LIHEAP block grant is funded through the U.S. Department of Health and Human Services. LIHEAP funds assist income eligible

households in meeting the increasing costs of home energy and reduce the severity of any energy-related crisis. Rhode Island's LIHEAP is administered by the Rhode Island Department of Human Services (DHS) Individual and Family Support/Community Services Division. LIHEAP intake and outreach is provided by the six local CAP agencies. Households are determined eligible for LIHEAP assistance according to income guidelines established by DHS.

- When customers inquire about, or apply for, LIHEAP assistance, the CAP agencies also provide information about the Income Eligible Energy Efficiency Services to help customers to reduce their energy consumption and energy costs.
- LIHEAP funds are leveraged with the IES program funds to provide weatherization and heating system replacements.
- **Weatherization Assistance Program.** The Weatherization Assistance Program (WAP) enables income eligible families to reduce their energy bills (and helps LIHEAP funds go farther) by making their homes more energy efficient, while addressing health and safety concerns. Funds are used to improve the energy performance of income eligible dwellings using the most advanced technologies and testing protocols available in the industry. WAP is funded through annual appropriations from the U.S. Department of Energy's Weatherization Assistance Program and the U.S. Department of Health and Human Services. The state allocates 15% of its annual LIHEAP funding to weatherization.

Commercial & Industrial Programs

Overview

In 2020, the Commercial & Industrial (C&I) sector was cost-effective with RI Test B/C ratios of a 6.57 for electric programs and 5.93 for gas programs. The Company spent 97% of the electric C&I implementation budget, achieved 82% of electric targeted annual energy savings and achieved 65% of electric targeted annual demand savings. The Company spent 71% of the gas C&I implementation budget and achieved 66% of gas targeted annual energy savings. Additional details on spending and savings by program can be found in Attachment 1, tables E-1, E-2, E-3 and Attachment 2, tables G-1, G-2 and G-3.

The electric commercial programs had over 3,300 participants and gas commercial programs had over 200 participants in 2020.

Large Commercial and Industrial Programs

National Grid offered four types of energy efficiency programs for commercial and industrial class customers. Depending on the customer's energy consumption and demand they could be eligible to participate in one or more of the four main energy efficiency programs.

- 1.) Large Commercial and Industrial New Construction:** Focused on offerings that target ground up new construction, major renovations, tenant fit-outs and end of life replacement equipment. The Large Commercial and Industrial New Construction program is eligible to customers with annual electric consumption greater than 1,000,000 kWh per year.
- 2.) Large Commercial and Industrial Retrofit:** Focused on all services and technologies towards retrofits needed for existing buildings. The Large Commercial and Industrial Retrofit program is eligible to customers with annual electric consumption greater than 1,000,000 kWh per year.
- 3.) Small Business/ Direct Install:** Focused on providing turn-key solutions to many types of small businesses. The Small Business/Direct Install Program is restricted to customers who consume less than 1,000,000 kWh per year,
- 4.) Active Demand Response Program:** Focused on reducing peak electric demand and associated costs for large and small commercial customers. All customers, regardless of size can participate in the Active Demand Response Program.

In addition to the four main efficiency programs, National Grid established a Market Sector Approach for commercial and industrial programs. The Market Sector approach allowed National Grid to provide customized efficiency solutions that aligned with the customers' needs and therefore increased participation in energy efficiency. The following market sectors were incentivized in 2020: Grocery, Municipal and State Buildings, State Strategic Energy Management Planning, Manufacturing/Industrial, K-12 schools, Hospitality (Restaurants and Lodging), Specialty Building (Farm/Agriculture and Extended Care Facilities), Hospitals, Colleges and Universities, Commercial Real Estate, and Multifamily.

Education and Outreach

National Grid offers training and education to various entities that enable energy efficiency in the marketplace and communities in Rhode Island. These include architects, engineers, lighting professionals and HVAC. In 2020 gas related trainings were held for RI and MA technical staff, sales staff, vendors, and project expeditors. Seminars were also held on topics including ZNE, cannabis, energy efficiency programs, multifamily infiltration reduction, as well as strategic electrification and VRFs. These events are great educational and outreach opportunities for our regional stakeholders.

Ten commercial trainings were held as part of the Code Compliance Enhancement Initiative in 2020. A Level I Building Operator Certification (BOC) class was held as well as multiple webinars.

Large Commercial and Industrial New Construction

The Commercial New Construction Program encourages energy efficiency in new construction, major renovations, planned replacement of aging equipment, and replacement of failed equipment through financial incentives and technical assistance to developers, manufacturers, vendors, customers, and design professionals. The program supports both the commercial and industrial new construction projects with proactive technical assistance during design with energy modeling and analysis.

In 2020, the New Construction Program performed well and exceeded its electric (175%) and gas (120%) annual energy goals. This was achieved by working with other C&I programs to reallocate additional resources to this program to help balance for lost savings opportunities attributable to COVID-19.

Large Commercial and Industrial Retrofit

The Large Commercial Retrofit Program incentivizes the replacement of existing equipment and systems with energy-efficient alternatives when the customer might otherwise not plan on making efficiency investments. The program offered three distinct pathways that aimed to address specific market barriers and to advance efficiency:

1. **Prescriptive Pathway:** Prescriptive incentives supported trade allies in advancing energy efficiency sales and provide signals to customers to make direct purchases that encouraged the adoption of more efficient and cost-effective options.
2. **Custom Pathway:** Custom incentives provided services to investigate opportunities to increase efficiency and support the steps needed to implement the upgrades.
3. **Upstream Pathway:** Upstream incentives provided an efficient way for customers to receive reduced pricing at the point of sale for energy efficiency equipment.

In 2020, the Company expanded its Large Commercial Retrofit portfolio to include a new market-specific initiative, and several new measure offerings for existing initiatives and programs. The new market-specific initiative is titled “Serve up the Savings” and focuses on working with national and regional restaurants to discover and implement energy efficiency opportunities for franchisees across Rhode Island. In addition to the new initiative, both the Grocery Initiative and the Upstream Program added new measure offerings to help support customers achieve savings and reduce their energy bills. National Grid also signed a contract with a vendor to work with customers in the telecommunications space in 2021.

Historically, these customers have been underserved due to a host of technical and nontechnical reasons but have strong potential for future savings. Beyond these new developments, the Company also continued its Strategic Energy Management Planning (SEMP) partnerships and renewed one of the six customers to a non-binding Memorandum of Understanding with annual energy reduction goals. Overall, the Large Commercial Retrofit program finished the program year with 49,456 MWh of electric savings and 86,451 MMBtus of gas savings.

Industrial Initiative

The Industrial Initiative leverages the world-renowned engineering firm Leidos, which partners with National Grid Sales representatives to determine energy efficiency opportunities for commercial and industrial customers across the state of Rhode Island. In 2020, the Industrial Initiative resulted in approximately 64 electric and 13 gas applications, amounting to roughly 16,600 gross annual MWh of electric savings and over 34,886 gross annual MMBtus of natural gas savings. The projects ranged from large-scale lighting installations to complex process and HVAC upgrades.

Energy Smart Grocer



The EnergySmart Grocer (ESG) initiative delivered cost effective, comprehensive energy savings in the Grocery market segment in 2020 by providing 6,635 net annual MWh and more than 1,948 net annual MMBtus. The Company would like to highlight two projects that were completed in 2020 for grocery customers.

1. A RI based supermarket chain completed construction on a brand-new location in Warwick. The project was comprehensive with the following energy saving measures being installed: doors on cases, night covers, HVAC and DHW Heat reclaim, floating head and suction on medium temperature and low temperature rack systems, exhaust fan VFDs on the main kitchen hoods and a Munter's roof top unit. The project saved 175 gross annual MWh.

2. An east coast supermarket chain conducted an upgrade of the floating head and suction pressure controls for their 6 locations in Rhode Island: Cranston, Woonsocket, Warwick, Johnston, Pawtucket, and Providence. The projects saved a total of 241 gross annual MWh.

Combined Heat and Power (CHP)

Combined heat and power (CHP) systems are a cost-effective way for customers to achieve energy savings and improve resiliency. Customers who install CHP generate electricity on-site and captures the thermal load for heating or process related needs, thereby eliminating the requirement to procure additional non-electric energy. While the total energy savings from CHP can be substantial, the CHP installation process can be challenging due to the long-lead times, complex technical requirements, and substantial capital investments. In 2020, National Grid completed a 630 kW CHP system at a wastewater treatment facility. The treatment facility will leverage its operational byproduct (sludge) as a biomass to fuel the CHP system. The project will account for approximately 4,089 net annual MWh, with 3,166 net annual MWh being claimed in 2020, and the remainder being claimed in 2021 after the CHP is commissioned.

Commercial Customer Initiatives

The RI digital application portal (RIDAP), saw its second full year of implementation in 2020, and gave customers and vendors the ability to submit incentive forms electronically without the need to submit multiple forms for the installation of different types of energy efficient equipment.

Street Lighting

The National Grid Solid-State Street Light Initiative provided energy efficiency incentives for street lighting and controls to municipal customers. There are two options for participating in this initiative, customer owned, and Company owned.

- Customer Owned Street Lighting- Rhode Island municipal customers are now eligible to purchase their own streetlights from National Grid. Incentives are being offered for solid state lighting and controls, as funding allows. In addition to the funding offered by National Grid, the Office of Energy Resources continues to accept applications for street lighting grant funding from communities.
- Company Owned Street Lighting – National Grid filed a company owned street lighting tariff in 2016. If the municipal customer prefers to continue leasing their streetlights from National Grid, the customer will receive the incentive and the Company will claim the savings.

In 2020, the Solid-State Street Lighting Initiative awarded over \$330,000 in incentives to 3 different municipalities, resulting in approximately 1,628 net annual MWh of electric energy savings. One of the highlights from the Solid-State Street Lighting Initiative included a Pawtucket streetlight and controls project which resulted in the installation of 5,971 street lighting fixtures and over 23,100 MWh of net lifetime savings.

Commercial Connected Solutions

The Company implemented an active demand reduction program in 2020 and 2019 after having run the program as a pilot in 2017 and 2018. Under the active demand reduction approach, customers agree to reduce their electric use during the system peak. In 2020, the Targeted Dispatch measure of the Commercial Connected Solutions program curtailed an average of 24.2 MW with 152 customer accounts participating in one event over the summer. In 2020, the Daily Dispatch measure of the Commercial Connected Solutions program curtailed an average of 4 MW with 13 customer accounts participating.

Commercial and Industrial Finance

For C&I Finance, please see the section of report that speaks specifically to finance mechanisms and activities.

Small Business Direct Install Program

National Grid's Small Business Direct Install program is a retrofit program that provides turnkey services to customers that consume less than 1,000 MWh per year. As part of the program, customers receive a free on-site energy assessment and a customized report detailing recommended energy efficient improvements. National Grid then completes retrofit installations at the customer's convenience. In 2020, the program served small businesses of all types including restaurants, non-profits, and small offices.

National Grid typically pays up to 70% of installation and equipment costs and customers can finance the remaining share of the project over as many as 60 months (typically 24) on their electric bill, interest free, using the Small Business Revolving Loan Fund, providing that funds are available. This year the program offered a 100% incentive starting in April to increase participation as the pandemic closed small businesses and owners' attention was focused on business continuation and health/safety concerns. The program also offered virtual audits during the time it was not possible to be in customers' businesses.

The Company would like to highlight several projects that were completed in 2020 for small business customers.

- RISE completed a retrofit lighting project of an office building in Providence. This project will result in savings of 23 gross annual MWh per year and \$3,600 per year. The customer was very complimentary of the impact the upgrade had on their internal office spaces.
- In Cranston, RISE served the customer's retail plaza common areas and tenanted spaces with a mix of various LED lighting upgrades and 10, WiFi thermostats. This project captured 20 gross annual MWh and 66 gross annual MMBtu.
- The program completed several projects at houses of worship in the fourth quarter. This concluded a year of successful outreach to this segment. Retrofits were completed in over 30 sites. Measures included lighting, lighting controls, domestic hot water (DHW) and WiFi and programmable setback thermostats.

In 2020, National Grid continued to utilize the existing contractor/electrician base through the Customer Directed Option (CDO) where customers are allowed to use their own contractors in conjunction with the expertise of the lead vendor in the Small Business Program. These additional "feet on the street" are

helping the program maintain its success even as some segments continue to be successfully served through other paths. In 2020, 21% of savings in the SMB/DI program came from CDO contractors.

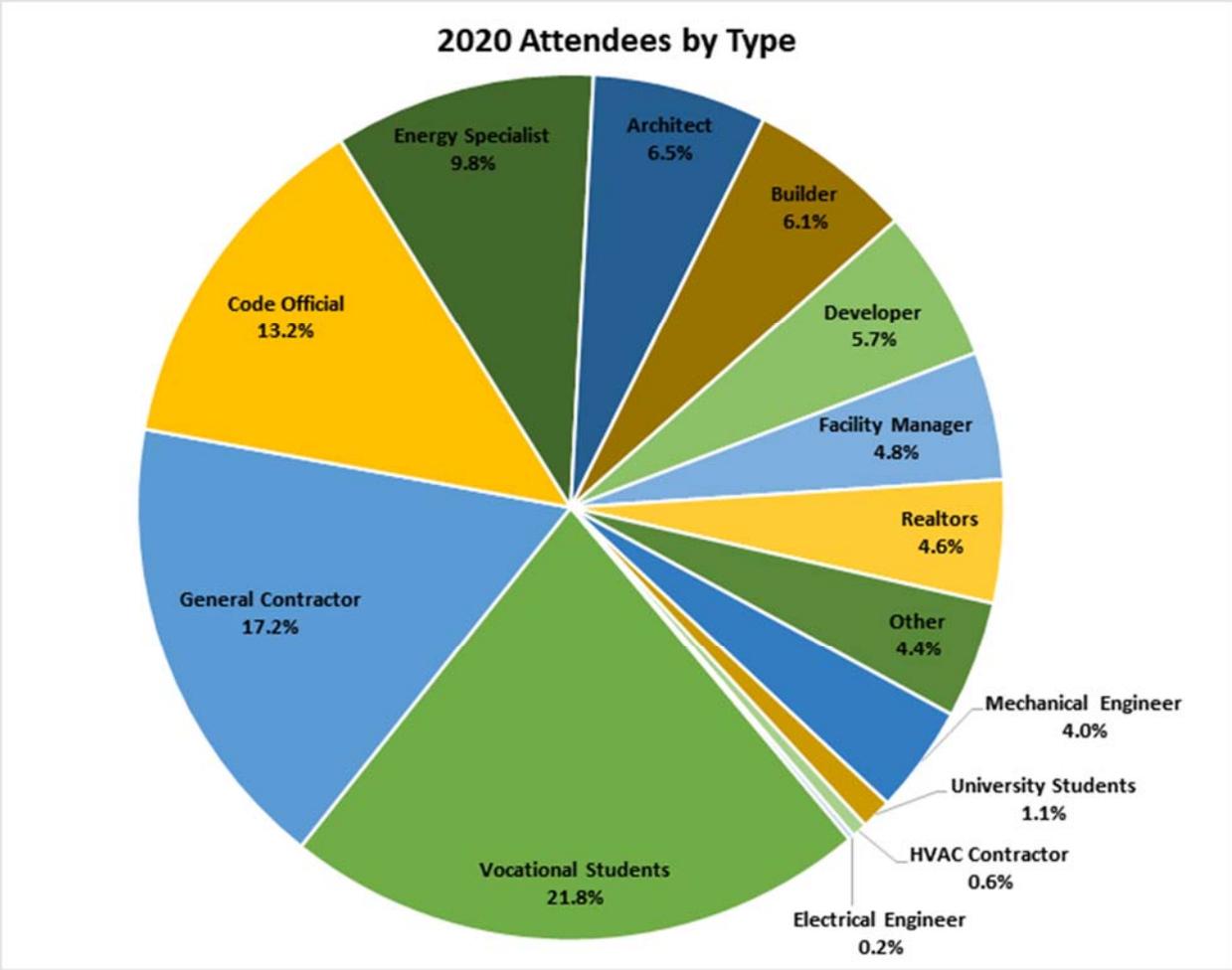
Codes and Standards

The Codes and Standards initiative provides targeted stakeholder outreach and technical guidance to improve compliance with minimum energy efficiency policies currently in effect and accelerate the improvement of these minimum efficiency requirements. In 2020 the Company continued to expand its energy code compliance support services to a variety of stakeholder groups.

Overview of Performance

In 2020, the Code Compliance Enhancement Initiative (CCEI) conducted 39 training events across the state with 514 total attendees. Both figures were significant decreases from last year's extremely high performance. This is largely attributable to COVID-19 since all in-person trainings scheduled in partnership with organizations were cancelled or postponed until further notice. CCEI responded by expanding its web training offerings and took attempted new ways to keep stakeholders engaged, such as development and delivery of its first ever virtual building tours.

While code officials have historically been CCEI's most targeted audience, reaching construction professionals was a focus in 2020. Through industry partnerships, most notably through incorporation into the curriculum of RIBA's Contractor Training & Development Program, vocational students and general contractors were the groups most engaged by CCEI in 2020 and together comprised about 40% of training participants. Otherwise, CCEI trainings continue to engage diverse stakeholders.



In addition to classroom and on-site trainings, CCEI also provides project-specific technical assistance as well as development and dissemination of energy code documentation/compliance assistance tools. The Company also continues to support awareness and use of the RI Stretch Code through CCEI, including promotion at every training event and fundamental technical guidance.

Community Based Initiative

The Rhode Island Community Initiative is the Company’s energy efficiency awareness campaign that drives program participation by deep municipal engagement with residents and small businesses through the advocacy of local officials. At the start of the program, the Company works hand-in-hand with municipalities to set program goals for energy efficiency upgrades and energy efficiency measures installed. These municipalities, in turn, work to achieve the goals with the help of volunteers and promotions at local events. As Communities progress through the program, the Company provides a number of enabling services including, sharing monthly progress reports, conducting monthly calls with municipalities to learn best practices, developing and printing customized outreach materials, and providing support for local events. At the end of the year, municipalities earn grant monies based on achieving the agreed percentage increase in

the identified goals. These funds are then utilized for energy savings projects on a municipal property, or on educational energy programs for community members.

In 2020, the Company reached out to four towns, however, due to COVID-19 challenges, only one town committed to the initiative. In the third quarter, the city of East Providence enrolled in the initiative. Specified metrics were set for East Providence including residential energy assessment goals, weatherization jobs, Wi-Fi thermostats, Small Business projects, homes converted to mini-split heat pumps, and refrigerators recycled. Due to Covid-19, the initiative’s time-frame was extended to the end of April 2021 in order to allow the city to continue to promote the program in order to achieve the metrics to earn a potential financial award.

East Providence, along with the Company, engaged residents and small businesses beginning in the summer and running through December 2020. Custom marketing materials were created, along with social media and webpage postings, and letters from municipal leadership. Local events were not held due to COVID-19.

Pilots, Demonstrations and Assessments

In 2020, the Company continued or started thirteen Pilots, Demonstrations, or Assessments. These research and development efforts ranged from completing pilots for ZNE pathways for residential and commercial and industrial new construction projects and continuing the Gas Demand Response pilot to demonstrations investigating Network Lighting Controls for HVAC control and Kitchen Exhaust control strategies for energy savings to assessments into the impact of including Home Energy Reports as part of HEA process. The Company updated the EERMC and PUC of the progress, findings, and next steps of all Pilots, Demonstrations, and Assessments over the course of 2020 in the subsequent Quarterly Reports.

The following table outlines the objectives, brief findings, and next steps of the 13 Pilots, Demonstrations, or Assessments completed in 2020.

Pilot, Demonstration, or Assessment	Objectives	Findings	Next Steps	Spend \$ Budget \$
Accelerate Performance C&I Demonstration	Use performance-based procurement to hold design teams contractually accountable throughout design and into occupancy.	Tried six different project recruitment efforts. Customers ultimately not willing to sign up. Projects pivoted to typical whole building approach offerings.	Close demonstration; Pivot to focus on whole building design approach.	\$4,236 \$38,845
Mechanical Power Transmission C&I Demonstration	To investigate adoption of higher efficiency belt and other various types of machinery used in C&I facilities	No installations; common enough understanding to combine with other O&M-type measures using ESPO platform	Transfer replacement of v-belts with synchronous belts and similar settings to ESPO offering suite	\$2,823 \$251,693

Secure Lighting Spec C&I Assessment	Develop a partnership with Lighting Manufacturers Reps, the common quoting software	Partnerships unable to be formed. Software unable to be augmented.	Closed assessment	\$2,823 \$43,897
Small Business Heat Pumps C&I Demonstration	Explore a go-to market strategy for cold climate heat pumps for small business.	Using the energy optimization framework, MA determined cost-effective fuel switching for small business electrification. Currently prohibited in RI, except with electric heat.	Use MA methodology, where applicable for RI (e.g. Elec Resistance)	\$2,823 \$279,293
Absorption Air Cleaner C&I Demonstration	(1) Identify the barriers to adoption of this technology; (2) Measuring energy savings and monitoring (IAQ)	Potential for scalability if energy analysis is simplified; code authorities use prescriptive codes for ventilation	Recommend to offer this measure through our custom gas and electric programs	\$18,954 \$256,269
Pathway to Zero Energy – C&I C&I Pilot	Test if the program design, can successfully drive market participation in Zero Energy Buildings in Rhode Island.	Education, awareness, marketing, and training was deployable. Recruiting, construction, and completion challenging.	Transfer market activity to programs: Whole Building New Construction offering	\$2,823 \$106,269
Pathway to Zero Energy – Resi Residential Pilot	Test if the program design, can successfully drive market participation in Zero Energy Buildings in Rhode Island.	Education and awareness, marketing, and training was deployable. ~100 ZER units in design, development, and construction	Transfer market activity to programs: Residential New Construction offering	\$193,531 \$287,846
Home Energy Reports Residential Assessment	(1) identify if HES improved conversion rates, and (2) assess the how HES could be integrated within HEA processes	Participants receiving the score had a higher conversion rate. Due to small sample size no clear conclusion on installing major measures. Sustained marketing needed	<u>Complete</u> ¹² . Use findings of the evaluation in program design evolution.	\$1,413 \$10,000

¹² http://rieermc.ri.gov/wp-content/uploads/2020/10/ng-ri-ewsf-impact-and-process-comprehensive-report_final_04sept2020.pdf

Gas Demand Response Pilot C&I Pilot	Target hourly peak reduction from Extended Demand Response (EDR) pilot offering, and Peak Period Gas Demand Response (PPDR) pilot offering	Pilot offerings will continue in the winter of 2020/21. Retain current levels of enrollment in the EDR offering and slightly increase participation in the PPDR pilot offering.	Continuing: Monitor and call events for winter 2020/2021 season, pay customer incentives, assess	\$96,925 \$366,015
Continuous Energy Improvement C&I Demonstration	Will CEI (aka SEM) recruits establish medium/long-term energy savings performance?	Comparing the customer's O&M plus capital measure savings during the test period to pre-intervention savings. Measuring the impact of coaching and education on custom savings.	Continuing: Continue use of implementation vendor to deliver demonstration	\$626,013 \$520,000
Network Lighting + HVAC Control C&I Demonstration	The benefits and costs associated with integrating NLC systems with BAS? What is the capacity in RI market to support integrated controls projects?	Phase I, completed in 2020, deployed 22 interviews with program staff, customers, and industry representatives. Phase II will include 4 customer installation projects, likely to be initiated in 2021.	Continuing: Recruit customers, install measures, M&V.	\$53,076 \$356,269
Kitchen Exhaust Controls C&I Demonstration	What is the savings potential of three kitchen exhaust measures?	Phase II will include 4 customer installations of energy recovery and electrostatic filtration products.	Continuing: Recruit customers, install measures, M&V.	\$26,094 \$28,269
Gas Heat Pumps C&I and Residential Demonstration	Validate performance of newer absorption gas HPs for C&I & Residential	Using assessment research, plan to recruit 3-4 C&I and 2-3 Residential customers for installation, measurement, cost comparisons.	Continuing: Plan recruitment & customer outreach	\$1,471 \$27,269

Pilots, Demonstrations and Assessments Highlights

Zero Energy Homes Pilot

The Pathway to Zero Energy Pilot (ZE Pilot) was launched in 2018 and completed in 2020. It was an effort to increase the quantity of low-energy use new construction and major renovations to create an inventory of zero energy homes to study and support the discussions around rate design and infrastructure needs

for all-electric homes and on-site renewables. The Pilot served to demonstrate that zero energy homes are being built in RI by RI teams, offer opportunities for RI companies to gain workforce training and qualifications, and provide services and rebates to accelerate performance. The Pilot complimented the Residential New Construction (RNC) Program as enrollment in RNC is a pre-requisite for eligibility of enhanced services and rebates. Elements of this Pilot were incorporated into the RNC Program for 2021 to continue the growth of the residential ZE market catalyzed by this Pilot. In 2020, the Pilot completed and certified six units to the DOE Zero Energy Ready standard (and was even featured in DOE’s June 2020 newsletter) with more projects in the pipeline to be completed in the next couple years. Since the inception of the ZE Pilot at the end of 2018, ZE homes in RI have increased from less than four a year to over 200 units enrolled in the ZE Pilot at the end of 2020. This pipeline consists of 113 housing units under construction and 103 housing units in planning and design. Of these homes, 207 are seeking Passive House certifications and 9 are pursuing DOE Zero Energy Ready certification.

Along with technical support provided to the projects mentioned above, the Education and Awareness component of the Pilot in 2020 included two webinars sharing ZE design best practices and practical lessons from local project case studies, a monthly feature in the RIBA Magazine, and a presentation on ZE showcasing several RI projects at ABx (the largest annual architecture, building and design event in the Northeast). In addition, the Workforce Development component of Pilot partnered with the ENERGY STAR HVAC program to deliver presentations about HVAC system sizing, selection, and optimum performance in ZE homes, including custom presentations focused on live RI projects, to this audience.

Gas Demand Response Pilot

In 2019 the Company introduced an additional DR pilot program called the Extended DR (EDR) pilot program to customers in addition to the Peak Period DR (PPDR) pilot program it ran in the winter of 2017-2018. The EDR calls events for a 24-hour period, while the PPDR calls events for 3 hours on a peak day At the outset of the pilot, the Company projected the enrollment of 2 customers in the Extended Demand Response (EDR) program and 6 customers in the Peak Period Demand Response (PPDR) program. For the 2019/20 winter season, the company enrolled 2 customers in the EDR program and 2 customer accounts in the PPDR program.

A total of two events were called in the winter of 2019-2020, one in December 2019 and one in February 2020. This report outlines the demand reductions from the event in February 2020. The summary of the event held in December 2019 was included in the 2019 Year End Report.

Event 2 – 2/21/2020

Customer	Program	Enrollment	Event Baseline	Reduction	Performance
Customer A	EDR	18 Dth/Hr	13 Dth/Hr	0 Dth/Hr	0%
Customer B	PPDR	6 Dth/Hr	2.8 Dth/Hr	2.8 Dth/hr	100%
Customer C	PPDR	5.8 Dth/Hr	2.0 Dth/Hr	1.8 Dth/Hr	90%
Customer D	EDR	14 Dth/Hr	7 Dth/Hr	7 Dth/Hr	100%

Based on the limited information on performance and enrollments for this pilot, as well as knowledge gained from other Company DR programs, the Company has considered expanding its DR offerings in

response to a critical system needs. While in most cases the market potential of DR alone would be insufficient to offset any gas infrastructure projects, the Company has considered implementing gas DR in combination with other distributed/non-infrastructure non-pipeline solutions. Specific to Rhode Island, the Company has developed a Long-Term Gas Capacity Study in response to a system constraint on Aquidneck Island. In that report, the Company used the learnings from the DR pilot to propose both an expansion of the existing programs and the development of additional offerings as part of potential gas capacity constraint solutions.

Evaluation, Measurement and Verification Studies

To verify the impacts that programs are having on energy savings, the Company hires third party, independent consulting firms to regularly conduct program evaluations as part of its measurement and verification process. These evaluations include engineering analysis, metering analysis, billing analysis, site visits, surveys, and market studies to realize the actual energy savings that particular measures have. Final reports and one-page graphical summaries of completed evaluations can be found on the Energy Efficiency Resource Management Council's website (<https://rieermc.ri.gov/plans-reports/evaluation-studies/>)

In 2020, 14 evaluation studies were conducted and filed in the 2020 Annual Energy Efficiency Plan. Some highlights include:

C&I Evaluation Studies

Impact Evaluation of Program Year 2017 Custom Gas Installations

- The primary objective of this evaluation study was to provide verification and re-estimation of energy savings for a sample of statistically-selected custom gas projects through site-specific inspection, monitoring, and analysis. This study determined that custom gas projects completed in 2017 had a realization rate of 92%. This realization rate was combined with results from program years 2016 and 2018 (see below) and applied to custom gas projects completed beginning in PY2021.

Impact Evaluation of Program Year 2018 Custom Gas Installations

- The primary objective of this evaluation study was to provide verification and re-estimation of energy savings for a sample of statistically selected custom gas projects through site-specific inspection, monitoring, and analysis. This study determined that custom gas projects completed in 2018 had a realization rate of 83%. This realization rate was combined with results from program year 2016 and 2017 (see above), resulting in an overall realization rate of 84%, which was applied to custom gas projects completed beginning in PY2021.

2019 Commercial and Industrial Programs Free-Ridership and Spillover Study

- This study assessed program free-ridership and spillover for C&I programs based on projects completed in the 2019 program year. Interviews were conducted with customers, design professionals, vendors, and distributors to determine the level of program influence on decision making.

Residential Evaluation Studies

Impact Evaluation of 2017-2018 EnergyWise Single Family Program

- The primary objective of this study was to assess gross and net savings for measure groups installed in 2017-2018 through the EnergyWise Single Family Program. This study used billing analysis and engineering approaches to verify gross savings and assessed free-ridership and spillover through surveys to determine the level of program influence on decision making. The impact evaluation results were used to update claimable savings beginning PY2021.

2019 Process Evaluation of EnergyWise Single Family Program

- The primary objective of this study was to assess the overall effectiveness of program delivery of the EnergyWise Single Family program in PY 2019. Stakeholder interviews, review of program materials and participants surveys were conducted to gather insights and recommendations to help improve cost-effectiveness, participation rates and customer satisfaction.

Impact Evaluation of 2017-2018 Multifamily Programs

- The primary objective of this study was to assess gross and net savings for measure groups installed in 2017-2018 through the EnergyWise Multifamily and Income Eligible Multifamily programs. This study used billing analysis and engineering approaches to verify gross savings and assessed free-ridership and spillover through surveys to determine the level of program influence on decision making. The impact evaluation results were used to update claimable savings beginning PY2021.

2019 Process Evaluation of Multifamily Programs

- The primary objective of this study was to assess the overall effectiveness of program delivery of the EnergyWise Multifamily and Income Eligible Multifamily programs in PY 2019. Stakeholder interviews, review of program materials, building decision-maker interviews and participant surveys were conducted to gather insights and recommendations to help improve cost-effectiveness, participation rates and customer satisfaction.

Impact Evaluation of 2017-2019 Home Energy Reports Program

- The primary objective of this study was to verify energy savings for the Home Energy Reports (HER) program from 2017 to 2019. The study used monthly billing analysis to estimate electricity and natural gas savings for the program overall and for specific customer sub-groups. The results of this study were used to update the program's realization rates beginning PY2021.

Cross-Cutting Evaluation Study

Piggybacking Diagnostic Study

- This study examined the Rhode Island evaluation practice of leveraging evaluation results from Massachusetts, or "piggybacking." Historically, this has been a common method of achieving cost savings in RI and has been accepted due to the similarity of program designs and regulations in the two states. This study conducted a formal review of the practice and suggested evidence-

based recommendations for when and how to piggyback across the various energy efficiency programs offered in RI.

Rhode Island C&I Market Characterization Data Collection Study

- This study was conducted to help the RI Office of Energy Resources and National Grid better understand the state's existing C&I building and equipment stock, support an efficiency potential study and lighting baseline determination, and otherwise identify ways to expand RI statewide energy efficiency initiatives. Study produced measure saturations that were used in the recently completed RI Technical Potential Study. A key finding is lower linear LED penetration in RI than MA.

Rhode Island Compliance Training and Building Permit Review

- This study documented the trainings held by the Rhode Island Code Compliance Enhancement Initiative (CCEI) in the years 2017, 2018, and 2019, and assessed the building permit data that is available online in Rhode Island. This analysis was intended to assist National Grid in developing placeholder values for savings that may be attributable to the CCEI as well as planning for upcoming baseline studies.

In addition, several studies from the 2021 Energy Efficiency Program Plan are already underway, some of the highlights include:

Residential Energy Efficiency Participation and Multifamily Census Study

- The primary objective of this study is to assess historical customer participation in Rhode Island residential energy efficiency programs from 2016 to 2020. This study will describe historical participation, characterize customers that participate in energy efficiency programs and identify customer segments that are potentially underrepresented. A comprehensive database of the multifamily buildings in Rhode Island that includes building characteristics and an indicator of whether each building has participated in a National Grid efficiency program will be developed.

Residential Appliance Recycling Impact Factor Update

- The primary objective of this study is to estimate gross and net savings for refrigerators and freezers for the Residential Appliance Recycling Program in 2019 and 2020. This study will produce updated savings to apply beginning in program year 2022. This study may also explore the importance of incentives on participation and optimal incentive levels.

Impact Evaluations of Custom Gas and Electric Installations

- Impact evaluations of program year 2018 custom electric projects and program year 2019 custom electric and gas projects are underway. Impact evaluations of program year 2020 custom electric and gas projects will begin later this year.
- The primary objective of these evaluation studies is to provide verification and re-estimation of energy savings for a sample of statistically-selected custom projects through site-specific inspection, monitoring, and analysis. These studies will produce updated realization rates to apply to custom electric and gas projects beginning in the calendar year following their completion.

Cost Schedules

Beginning with the 2019 Year End Report, a new component of the Energy Efficiency Year-End Report was the inclusion of Attachments 1a and 2a. These Attachments were included at the request of the Rhode Island Division of Public Utilities and Carriers (Division) as a courtesy to the Rhode Island Public Utilities Commission (PUC) starting with the 2019 Year End Report. National Grid collaborated with the Rhode Island Division of Public Utilities and Carriers to develop these cost schedules beginning in the fall of 2019. These cost schedules (1a and 2a) provide an additional level of granularity for the spending occurring through the Company's energy efficiency programs.

In addition to the non-confidential Attachments 1a and 2a being filed in the Year End Report, the Company is also filing confidential vendor schedules, which detail costs to individual vendors and other external entities. These confidential schedules were also developed in collaboration with the Division through a Non-Disclosure agreement. The Company is filing these confidential schedules with the PUC with a motion for protective treatment. Below is a list of the confidential schedules that the Company will provide to the PUC:

- **Confidential Vendor Schedule 1 - 2020 Year End Report - Table E-1 - Program Level Cost Breakdown into Subcategories:** A breakout of the electric energy efficiency programs by cost category and sub category, detailing vendor and external entity costs at a program level
- **Confidential Vendor Schedule 2 - 2020 Year End Report - Table G-1 - Program Level Cost Breakdown into Subcategories:** A breakout of the gas energy efficiency programs by cost category and sub category, detailing vendor and external entity costs at a program level
- **Confidential Vendor Schedule 3 - 2020 Rhode Island Energy Efficiency Vendor Costs (Electric and Natural Gas):** A listing of the vendor and external entity costs across both the electric and gas portfolios, broken out by cost category
- **Confidential Vendor Schedule 4 - 2020 Rhode Island Energy Efficiency Vendor Costs >\$1M (Electric and Natural Gas):** A listing of the vendor and external entity costs greater than \$1M across both the electric and gas portfolios in 2020, broken out by cost category, with additional description added of vendor services rendered, and additional vendor details
- **Confidential Vendor Schedule 4a - 2020 Rhode Island Energy Efficiency Vendor Costs >\$1M (Electric):** A listing of the vendor and external entity costs greater than \$1M for the electric portfolio in 2020, broken out by cost category
- **Confidential Vendor Schedule 4b - 2020 Rhode Island Energy Efficiency Vendor Costs >\$1M (Natural Gas):** A listing of the vendor and external entity costs greater than \$1M for the gas portfolio in 2020, broken out by cost category

Test Performance Metrics

Carbon Reductions

The Company continued to track annual and lifetime carbon reductions resulting from investments in the electrification of heating and delivered fuels measures. These carbon reductions are included in the lifetime carbon reduction metric the Company reports on page 8.

While the Company did not begin to track greenhouse gas equivalencies, in the 2021 Annual Plan approved in Docket 5076, the Company agreed to begin reporting out on greenhouse gas equivalencies in 2021 and will start to do so in the Company’s quarterly reports.

Lifetime MWh and MMBtu Savings

National Grid currently includes lifetime electric and gas savings in its Annual Plans and did so in its quarterly and year-end report and will continue to do so in future reporting. These metrics can be found in Table 1 of Attachment 1 and Attachment 2.

Program costs per energy savings

In 2020, the Company continued to report on the actual costs of lifetime savings compared to planned values in its quarterly reports and is doing so in its year-end report as well, these metrics can be found in Table 1 of Attachment 1 and Attachment 2. The Company is also reporting out on \$/kW for the Residential ConnectedSolutions and Commercial ConnectedSolutions programs, these metrics can be found in Attachment 1, Table E-2A.

Customer Satisfaction Metrics

Throughout 2020, the Company tracked customer responses and reported out on the average satisfaction across tracked programs in its quarterly reports. The Customer Satisfaction metric is based on an average across the EnergyWise, Single Family Income Eligible Services, and Residential Consumer Products Programs. The metric is based off customer responses to the following questions: Would you recommend this service to friend or family? How satisfied are you with the energy efficiency services you received? Below is a summary of the average satisfaction across tracked programs from each of the 2021 quarterly reports. This is a cumulative metric:

Customer Satisfaction Metric - 2021			
Q1	Q2	Q3	Q4
92.8%	92.7%	94.0%	94.2%

The Company believes this metric captures customer satisfaction across these programs and shows strong customer satisfaction with these programs.¹³

Regarding more specific customer feedback. The most frequently mentioned improvement for the energy efficiency programs is to include energy efficient windows and doors to programs. Specifically, about the assessment and weatherization programs there were some comments that it took a while for direct install items to arrive. This was a new feature added in 2020 in response to COVID. Rather than having in person energy specialists install energy efficient upgrades, assessments were moved to a virtual experience with the energy efficient products shipped to the customer at no cost. Also

mentioned was that the assessment and weatherization process can be confusing especially when there are pre-weatherization barriers involved.

Peak Hour Gas Demand Savings

In the Company's 2020 quarterly reports and 2020 year-end report, the Company tracked an estimate of peak-hour gas demand savings. The Company has included footnotes in its reporting that state that the Company considers this to be a rough approximation of peak-hour gas demand impacts. This metric can be found in Table 1 of Attachment 2.

Future Looking Performance Metrics

During the planning for Docket 5076, the Company engaged with the DPUC, EERMC, OER, and other stakeholders to develop mutually agreeable performance incentive structures for 2021 which was submitted with the 2021 Annual Plan.

Financing

In 2020, the Company offered a variety of finance options to both commercial and residential customers. Since 2011, the Company has managed several revolving loan funds that allow customers to pay for their portion of an energy efficiency project through their monthly bills. The funds allowed most participants to remain cash-flow positive and helped relieve pressure on the Energy Efficiency Program (EEP) charge by reducing incentive budgets. In 2014, the Company began managing a revolving loan fund for state and municipal customers as part of the RI Public Energy Partnership (RI PEP). Those efforts and financial resources associated with them have been redirected into the Efficient Buildings Fund (EBF). In 2015, the Company extended opportunities for gas projects through the Large Commercial & Industrial (LC&I) gas revolving loan fund. In 2020, National Grid had its most successful year in EBF, in terms of claimed electric savings, to date.

Large C&I Revolving Loan Fund

Through the electric LC&I revolving loan fund, the Company offered \$5.14 million in on-bill financing to 74 Large Commercial customers through 101 loans resulting in electric savings of 7,570 net annual MWh. At the end of 2020, the fund had a balance of \$1.19 million, money that will be available for more loans in 2021 and in the future.

Through the gas LC&I revolving loan fund, the Company offered \$0.46 million in loans to 20 Large Commercial customers resulting in gas savings of 18,173 net annual MMBtus. At the end of 2020, the fund had a balance of \$1.09 million, money that will be available for more loans in 2021 and in the future.

The Company continued to manage a revolving loan fund in support of the RI PEP. No customers participated in this offering in 2020. At the end of 2020, the fund had a balance of \$462,477.

Small Business Revolving Loan Fund:

Of the 615 customers that participated in the Small Business Direct Install program, each received financing to cover 30% share of the project costs, either over 24 months at zero (0) percent interest or a lump sum payment with a 15% discount. Overall, the Small Business Revolving Loan fund was able to provide \$ 0.784 million in loans that led to 10,275 net annual MWh in energy savings. At the end of 2020, the fund had a balance of \$3.14 million.

Efficient Buildings Fund (EBF): Since 2015, National Grid, the Rhode Island Office of Energy Resources (OER), and the Rhode Island Infrastructure Bank (RIIB) have worked together to leverage system benefit charge (SBC) funds and drive energy improvements in facilities in cities and towns across Rhode Island.

The seed money to support this unique revolving loan fund came from a \$1.8 million allocation of rate-payer (SBC) funds, mandated by the law, and \$3.0 million in funds from the Regional Greenhouse Gas Initiative (RGGI) controlled by OER. In addition, National Grid, based on a request from RIIB each program year, agreed to transfer \$5.26 million in energy efficiency program funds to RIIB in 2020 and \$5.0 million in 2021 to support EBF, subject to PUC approval. These transfers were included in their respective Energy Efficiency Plans and related budgets.

In 2020, the EBF helped support a city-wide streetlight conversion from legacy technologies to LEDs in Pawtucket which resulted in 2,172 net annual MWh of savings.

Commercial Property Assessed Clean Energy (C-PACE):

No savings were realized through C-PACE funding in 2020.

Ascentium

In 2020 National Grid continued working with Ascentium Capital, a specialty financing firm who is a leader in equipment and technology financing solutions, to offer customers another way to finance their projects. A simple, rapid approval loan process allows customers to use their incentive to buy down interest on loans (typically to zero percent depending on the term) for up to \$250,000. The company saw some interest in this offering, but no projects were funded in 2020.

Other Commercial Financial Developments

National Grid is committed to making sure that customers have a robust selection of financial mechanisms that have proven themselves successful in other programs across the United States and Canada. In 2018, National Grid began discussing Metrus Energy's Efficiency as a Service offering. Metrus has completed projects with numerous Fortune 500 companies across the United States. Metrus has restricted this offer to customers with a combined energy gas and electric spend of greater than \$1,000,000 annually. No projects were funded by Metrus in 2020.

Heat Loan

The HEAT loan provides zero-percent financing to qualified residential customers to address upfront, initial costs associated with energy efficiency upgrades in their homes and spreads the cost over multiple years. The EnergyWise, Multifamily, HVAC, and Connected Solutions programs pay the negotiated interest for the customer cost portion of the loan. There is a lender of last resort, The Capital Good Fund (CGF), that provides financing to customers with less than perfect credit. There were 684 loans processed in 2020

totaling approximately \$5.6 million in project costs. In 2020 the HEAT Loan allowed for a portion of pre-weatherization barriers remediation to be financed and two-dozen customers incorporated those upgrades to their loans.

Rhode Island Comprehensive Marketing

In 2020, National Grid launched new robust, comprehensive marketing campaigns, which drove awareness, interest and participation in the Company's Energy Efficiency programs.

These omni-channel marketing efforts were reflective of the COVID-19 pandemic; messaging focused on affordability, safety and energy saving solutions for customers. Our communication efforts reinforced the financial & energy saving benefits of making upgrades with no-cost virtual assessments, low-cost energy efficient products, and rebates through our energy saving programs. Sentiment and tone were empathetic and helpful as our customers dealt with a new reality.

The Company's communication plan encompassed two main elements: an overarching education campaign focused on driving awareness and interest and program specific campaigns focused on driving consideration and participation in our energy efficiency programs.

The education campaign highlighted ways for customers to save money and energy with our portfolio of products. Marketing outreach included video, bill inserts, email, digital audio ads, radio, OTT/CTV, meal delivery inserts, digital ads, and social media ads. Campaign highlighted energy "holidays" such as Earth Day in April and Energy Efficiency Day in October through email and social campaigns.

Program specific campaigns focused on messaging that would drive consideration and participation including: program details, benefits of participation (energy saving, cost saving, comfort), and educational content. Marketing channels included email, radio, out of home, social media, and digital and video ads. The National Grid website continued to serve as a source for information on products and services as well as rebates available to customers.

Jobs Impacts

National Grid hired Guidehouse, Inc. to conduct a study of the workforce impacts from National Grid's energy efficiency programs in 2020. The study estimates the number of full-time equivalent (FTE) employees engaged in all aspects of energy efficiency programs where National Grid provided funding support in 2020. The FTE counts cover a wide range of energy efficiency services, including independent contractors and plumbers, rebate processors, engineers, and National Grid Staff. The study also includes counts of Weatherization Assistance Program (WAP) FTEs that are employed by the Community Action Program agencies that deliver low-income energy efficiency services.

Guidehouse determined that 827.5 full-time equivalent (FTE) employees had work in 2020 supported by investments by National Grid in energy efficiency programs provided to its Rhode Island electricity and natural gas customers. At a high level, spending for energy efficiency programs in Rhode Island decreased from 2019 to 2020, leading to decreased activity and therefore a decrease in FTEs among the associated workforce. The study identified 1,093 companies and agencies involved in National Grid's 2020 energy

efficiency programs, 73% of which were located in Rhode Island. The companies identified include those whose employees are counted in the FTE analysis, as well as additional companies who assisted customers to secure equipment rebates, for example through the New Construction, Commercial Upstream Lighting, or High Efficiency HVAC programs.

**Full-Time Equivalent (FTE) Employment Supported by
Energy Efficiency Programs in Rhode Island in 2020**

Programs	Total FTEs
Electric Programs	
Commercial and Industrial	203.7
Residential Income Eligible	59.1
Residential Non-Income Eligible	263.7
Gas Programs	
Commercial and Industrial	19.8
Residential Income Eligible	38.5
Residential Non-Income Eligible	189.2
Other	
National Grid	44.4
Marketing	9.0
COVID-19 Training	0.3
Total all 2020 Rhode Island FTEs	827.5

The study’s findings were developed through interviews with energy services and equipment vendors and National Grid contractors, as well as through a detailed review of National Grid’s records of all energy efficiency measures installed in homes, apartment buildings, businesses, and industries throughout the state in 2020. Guidehouse calculated the labor hours required for each installation based on industry standards and discussions with contractor experts.

One FTE equals 1,760 work hours, or the total of one person working 8 hours a day for 220 work days in an average year. Because a “full-time equivalent” employee often represents the labors of more than one person over the course of a year, the number of individual workers employed as result of Rhode Island energy efficiency programs funded by National Grid is far larger than the total of FTEs. The study and a complete list of businesses are included as Attachment 5.

Shareholder Incentive

The Company’s Shareholder Incentive earnings are determined by its performance against the established annual savings goals documented in the 2020 EEPP. Under the current incentive structure, the Company

can earn a target based-incentive rate equal to 5.0% of the eligible spending budget in a program year for achieving electric energy and demand goals, and gas energy savings goals.

Since 2015, the electric portfolio incentive structure has included elements for both energy and demand savings. This structure allows the Company to earn a target-based incentive rate equal to 3.5% of the eligible annual spending budget for achieving MWh savings goals and 1.5% of the annual spending budget for achieving MW savings goals.

For the gas portfolio, where there is no demand savings component, the original target-based incentive rate equal to 5.0% of the eligible annual spending budget for achieving MMBtu savings goals remained in place.

The Shareholder Incentive is earned by sector. An incentive is earned if savings in a sector are between 75% and 125% of the savings goal for the sector. An enhanced incentive up to 125% of the target incentive is available for achieving greater savings than the savings target. The residential electric and gas sectors, and commercial and industrial electric sector earned an incentive for their 2020 performance. The commercial and industrial gas sector and the income eligible electric and gas sectors did not earn an incentive for their 2020 performance.

The Company has earned a total of \$3,590,407 for the implementation of its energy efficiency programs in 2020.

For the 2020 Year End Report, a correction was made for the EnergyStar Lighting, EnergyStar HVAC, and Energywise Single family programs that also impacts 2019 energy and demand savings. Due to a programming error in the software system that the Company used to track and report on programmatic saving and resulting benefits, a small fraction of the energy and demand savings that should have been recorded as negative savings were instead recorded as positive energy savings. The result of this correction decreased the 2019 year-end energy and demand savings for the EnergyStar Lighting program by 606.1 net annual MWh and 82.9 net annual kW, for the Energy Star HVAC program by 3.6 net annual MWh and 1.3 net annual kW, and the Energywise Single Family program by 4.2 net annual MWh, 0.6 net annual kW, and 44.3 net annual MMBtu.

This correction decreases the 2019 shareholder incentive by \$10,050 for electric energy savings, \$3,922 for electric demand savings, and \$157 for gas energy savings. The Company believes that this amount should be refunded to customers and has therefore reduced the 2020 earned shareholder incentive by \$10,050 for electric energy savings, \$3,922 for electric demand savings, and \$157 for gas energy savings. The amount of \$3,590,407 stated above, includes this correction.

More details on the Company's Shareholder Incentive achievements are included in Attachments 1 and 2 and tables E-4 and G-4.

Attachment 1

Electric Summary Table of Year-End Results

NATIONAL GRID ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND
Table E-1: Summary of 2020 Target and Year End Results

Sector and Program	(1) Demand Reduction (Annual kW)			(2) Pct Achieved			(3) Energy Savings (Annual MWh)			(4) Pct Achieved			(5) Customer Participation			(6) Pct Achieved			(7) Implementation Expenses (\$ 000)			(8) Pct Achieved			(9) Energy Savings (Lifetime MWh)		(10) Pct Achieved		(11) \$ / Lifetime kWh	
	Target	Actual	Actual	Target	Actual	Actual	Target	Actual	Actual	Target	Actual	Actual	Target	Actual	Actual	Budget	Actual	Actual	Planned	Actual	Actual	Planned	Actual	Planned	Actual	Planned	Actual			
Commercial & Industrial																														
Large Commercial New Construction	1,183	2,237	189.1%	9,828	17,160	174.6%	108	83	76.8%	\$5,335.7	\$6,348.9	119.0%	147,913	258,650	174.9%	\$	0.036	\$0.025												
Large Commercial Retrofit	14,933	7,434	49.8%	72,871	49,456	67.9%	2,669	2,717	101.8%	\$23,801.3	\$21,657.0	91.0%	823,828	544,217	66.1%	\$	0.029	\$0.040												
Small Business Direct Install	1,347	1,593	118.3%	11,500	10,340	89.9%	693	527	76.1%	\$7,568.6	\$7,508.4	99.2%	126,066	126,392	100.3%	\$	0.060	\$0.059												
Commercial ConnectedSolutions										\$2,078.5	\$2,334.2	112.3%																		
Commercial Pilots										\$106.3	\$4.6	4.4%																		
Community Based Initiatives - C&I										\$66.1	\$0.6	0.9%																		
Finance Costs										\$5,216.7	\$5,216.7	100.0%																		
SUBTOTAL	17,463	11,264	64.5%	94,198	76,955	81.7%	3,470	3,327	95.9%	\$44,173.1	\$43,070.3	97.5%	1,097,807	929,259	84.6%	\$	0.040	\$0.046												
Income Eligible Residential																														
Single Family - Income Eligible Services	566	333	58.8%	3,755	2,042	54.4%	3,300	3,863	117.1%	\$12,846.1	\$5,961.8	46.4%	45,723	19,714	43.1%	\$	0.281	\$0.302												
Income Eligible Multifamily	155	85	55.0%	2,392	546	22.8%	4,800	972	20.3%	\$3,549.0	\$1,242.2	35.0%	31,899	7,455	23.4%	\$	0.111	\$0.167												
SUBTOTAL	721	418	58.0%	6,147	2,588	42.1%	8,100	4,835	59.7%	\$16,395.1	\$7,204.0	43.9%	77,623	27,169	35.0%	\$	0.211	\$0.265												
Non-income Eligible Residential																														
Residential New Construction	74	91	122.7%	870	784	90.2%	352	482	136.9%	\$973.5	\$949.5	97.5%	15,846	14,099	89.0%	\$	0.061	\$0.067												
ENERGY STAR® HVAC	94	188	200.0%	2,233	3,101	138.9%	1,992	5,914	296.8%	\$2,525.1	\$3,364.1	133.2%	33,961	52,272	153.9%	\$	0.074	\$0.064												
EnergyWise	967	823	85.1%	6,082	5,160	84.9%	11,000	11,923	108.4%	\$15,692.2	\$15,484.1	98.7%	22,310	19,464	87.2%	\$	0.703	\$0.796												
EnergyWise Multifamily	364	300	82.4%	2,793	1,683	60.3%	4,000	3,270	81.8%	\$2,804.3	\$1,551.2	55.3%	29,344	14,042	47.9%	\$	0.096	\$0.110												
Home Energy Reports	3,195	3,622	113.4%	23,239	26,345	113.4%	323,248	271,815	84.1%	\$2,728.1	\$2,196.1	80.5%	23,239	26,345	113.4%	\$	0.117	\$0.083												
ENERGY STAR® Lighting	6,201	6,045	97.5%	38,093	36,733	96.4%	256,082	328,940	128.5%	\$15,375.8	\$9,069.2	59.0%	195,647	187,057	95.6%	\$	0.079	\$0.048												
Residential Consumer Products	714	788	110.4%	4,768	3,996	83.8%	26,905	6,843	25.4%	\$2,199.2	\$2,241.1	101.9%	32,041	29,452	91.9%	\$	0.069	\$0.076												
Residential ConnectedSolutions										\$461.6	\$570.6	123.6%																		
Energy Efficiency Education Programs										\$40.0	\$32.0	80.0%																		
Residential Pilots										\$287.8	\$193.5	67.2%																		
Community Based Initiatives - Residential										\$203.9	\$106.9	52.4%																		
Comprehensive Marketing - Residential										\$382.3	\$403.6	105.6%																		
SUBTOTAL	11,609	11,859	102.1%	78,077	77,803	99.6%	623,580	629,186	100.9%	\$43,673.8	\$36,161.9	82.8%	352,388	342,731	97.3%	\$	0.124	\$0.106												
Regulatory																														
OER										\$893.7	\$893.7	100.0%																		
EERMC										\$893.7	\$894.3	100.1%																		
SUBTOTAL										1,787.4	1,788.0	100.0%																		
TOTAL	29,793	23,540	79.0%	178,423	157,346	88.2%	635,150	637,349	100.3%	\$106,029.4	\$88,224.3	83.2%	1,527,817	1,299,159	85.0%	\$	0.069	\$0.068												
Municipal LED Street Lights										\$600.0	\$323.1	53.9%																		
System Reliability Procurement										\$81.2	\$20.5	25.3%																		

NOTES

- (1)(4)(7) Targets from Docket 4979 - Compliance Filing, Attachment 5, Table E-7 (electric)
- (3) Pct Achieved is Column (2)/ Column (1).
- (6) Pct Achieved is Column (5)/ Column (4).
- (8) Participation was planned and is reported in 'net' terms which takes into account free-ridership and spillover.
- (9) Pct Achieved is Column (8)/ Column (7).
- (10) Approved Budget includes Implementation and Evaluation budgets from Docket 4979, Compliance Filing, Attachment 5, Table E-3 (electric)
- (11) Year To Date Expenses includes implementation expenses.
- (12) Pct Achieved is Column (11)/ Column (10).
- (15) Pct Achieved is Column (14)/ Column (13).
- (17) \$/lifetime kWh = Column (11)/Column (14)
- (16) Planned \$/lifetime kWh from Docket 4979 - Attachment 5, Table E-5 (electric) - adjusted to reflect format of quarterly report. Program Implementation Expenses/lifetime kWh. = Column (10) / Column (13)

The Company received \$1,525,000 from the State for municipal street lights in 2017, an additional \$350,000 in 2019, and an additional \$600,000 in 2020 to pay out to municipal customers on its behalf.

System Reliability Procurement targets from Docket 4979 - Attachment 5, Table E-2 (electric), not included in Expenses Total

NATIONAL GRID ELECTRIC ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND
Table E-2: Summary of Value, kW, and kWh by Program
2020 Program Year

	Value (000's)											kW Saved				MWh Saved		MMBtu of Gas		MMBtu of Oil			
	Total	Capacity			Energy					Non-Electric		Value		Summer	Winter	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime		
		Generation		Trans	Distribution	DRIPE	Winter		Summer		Non-Electric Benefits	Economic Benefits	Non-embedded Electric NOx Reductions									Non-embedded Electric CO2 Reductions	
		Summer	Winter				On Peak	Off Peak	On Peak	Off Peak													DRIPE
Commercial & Industrial																							
Large Commercial New Construction	\$71,081	\$2,858	\$0	\$3,487	\$2,976	\$4,540	\$6,544	\$4,218	\$3,518	\$2,001	\$6,549	\$6,471	\$19,745	\$347	\$7,828	2,237	1,772	17,160	258,650	(719)	(10,841)		
Large Commercial Retrofit	\$234,310	\$6,353	\$0	\$8,363	\$7,139	\$13,555	\$11,995	\$9,292	\$7,742	\$4,854	\$17,728	\$6,907	\$123,422	\$491	\$16,470	7,434	6,041	49,456	544,217	(34,371)	(378,222)		
Small Business Direct Install	\$41,955	\$1,537	\$0	\$1,995	\$1,703	\$3,270	\$2,566	\$1,680	\$2,240	\$1,252	\$3,881	\$3,110	\$14,791	\$106	\$3,825	1,593	1,585	10,340	126,392	(8,185)	(100,049)		
SUBTOTAL	\$347,346	\$10,748	\$0	\$13,845	\$11,818	\$21,365	\$21,105	\$15,189	\$13,500	\$8,107	\$28,157	\$16,489	\$157,959	\$943	\$28,123	11,264	9,398	76,955	929,259	(43,275)	(489,111)		
Income Eligible Residential																							
Single Family - Income Eligible Services	\$14,981	\$258	\$0	\$343	\$293	\$457	\$411	\$377	\$234	\$204	\$676	\$5,937	\$5,127	\$97	\$566	333	321	2,042	19,714	483	4,948	3,115	57,355
Income Eligible Multifamily	\$3,723	\$100	\$0	\$122	\$104	\$142	\$186	\$170	\$68	\$54	\$202	\$878	\$1,478	\$10	\$207	85	97	546	7,455	0	0	0	0
SUBTOTAL	\$18,704	\$358	\$0	\$465	\$397	\$600	\$597	\$547	\$302	\$258	\$878	\$6,815	\$6,605	\$107	\$774	418	418	2,588	27,169	483	4,948	3,115	57,355
Non-Income Eligible Residential																							
Residential New Construction	\$5,202	\$181	\$0	\$199	\$170	\$175	\$353	\$470	\$66	\$48	\$296	\$1,520	\$1,329	\$22	\$373	91	53	784	14,099			87	2,182
ENERGY STAR® HVAC	\$18,296	\$236	\$0	\$291	\$248	\$395	\$1,478	\$1,616	\$183	\$136	\$1,207	\$6,006	\$4,777	\$294	\$1,429	188	618	3,101	52,272	76	1,163	12,687	190,455
EnergyWise	\$40,282	\$401	\$0	\$514	\$438	\$707	\$381	\$322	\$301	\$219	\$841	\$20,445	\$14,400	\$738	\$575	823	1,008	5,160	19,464	0	0	33,091	610,866
EnergyWise Multifamily	\$6,032	\$255	\$0	\$327	\$279	\$381	\$306	\$229	\$206	\$143	\$574	\$816	\$2,079	\$28	\$410	300	350	1,683	14,042	0	0	525	7,403
Home Energy Reports	\$8,800	\$257	\$0	\$393	\$335	\$1,404	\$685	\$548	\$281	\$191	\$1,623	\$0	\$2,196	\$36	\$849	3,622	5,598	26,345	26,345	0	0	0	0
ENERGY STAR® Lighting	\$49,513	\$1,915	\$0	\$3,271	\$2,793	\$3,489	\$4,828	\$3,774	\$2,043	\$1,339	\$11,252	(\$5,425)	\$14,420	(\$22)	\$5,835	6,045	7,268	36,733	187,057	(40,254)	(201,272)	(24,486)	(122,431)
Residential Consumer Products	\$10,390	\$479	\$0	\$692	\$591	\$1,122	\$533	\$498	\$424	\$340	\$1,338	\$34	\$3,406	\$41	\$891	788	454	3,996	29,452	14	289	14	289
SUBTOTAL	\$138,514	\$3,725	\$0	\$5,686	\$4,854	\$7,673	\$8,563	\$7,460	\$3,505	\$2,416	\$17,131	\$23,396	\$42,608	\$1,136	\$10,362	11,859	15,350	77,803	342,731	(40,164)	(199,820)	21,919	688,763
TOTAL	\$504,564	\$14,831	\$0	\$19,996	\$17,069	\$29,637	\$30,265	\$23,196	\$17,307	\$10,781	\$46,166	\$46,700	\$207,172	\$2,187	\$39,258	23,540	25,167	157,346	1,299,159	(82,956)	(683,983)	25,034	746,118

NATIONAL GRID ELECTRIC ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND
 Table E-2A
 Summary of 2020 Demand Response Benefits and Savings

	Benefits (000's)												Load Reduction (KW)	MWh Saved	
	Total	Capacity					Energy			Non Electric	Societal		Summer	Annual	Lifetime
		Summer Generation	Capacity DRiPE	Trans	Dist	Reliability	Summer		Energy DRiPE	Non Resource	Carbon	Economic			
							Peak	Off Peak							
Non-Income Eligible Residential															
Residential ConnectedSolution	\$2,702	\$63	\$1,369	\$444	\$387	\$54	\$0	\$0	\$0	\$0	\$0	\$383	4,100	11	11
Commercial & Industrial															
Commercial ConnectedSolutio	\$26,227	\$690	\$14,894	\$3,058	\$2,664	\$371	\$0	\$0	\$0	\$0	\$4,552		28,200	0	0
TOTAL	\$28,930	\$753	\$16,263	\$3,502	\$3,051	\$424	\$0	\$0	\$0	\$0	\$0		32,300	11	11

NATIONAL GRID ELECTRIC ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND
Table E-3: Summary of B/C Ratios, Value and Costs (\$000's)
2020 Program Year

	(1) Benefit/ Cost	(2) Total Value	(3) Program Implementation Expenses	(4) Customer Contribution	(5) Shareholder Incentive
Commercial & Industrial					
Large Commercial New Construction	9.23	\$71,081.1	\$6,348.9	\$1,355.1	
Large Commercial Retrofit	7.61	\$234,309.9	\$21,657.0	\$9,126.0	
Small Business Direct Install	4.14	\$41,954.8	\$7,508.4	\$2,625.5	
Commercial ConnectedSolutions	11.24	\$26,227.5	\$2,334.2		
Commercial Pilots			\$4.6		
Community Based Initiatives - C&I			\$0.6		
Finance Costs			\$5,216.7		
SUBTOTAL	6.57	\$373,573.4	\$43,070.3	\$13,106.5	\$660.3
Income Eligible Residential					
Single Family - Income Eligible Services	2.51	\$14,980.7	\$5,961.8	\$0.0	
Income Eligible Multifamily	2.62	\$3,723.3	\$1,242.2	\$177.2	
SUBTOTAL	2.53	\$18,704.0	\$7,204.0	\$177.2	\$0.0
Non-Income Eligible Residential					
Residential New Construction	2.71	\$5,201.8	\$949.5	\$968.2	
ENERGY STAR® HVAC	3.17	\$18,296.4	\$3,364.1	\$2,412.0	
EnergyWise	2.50	\$40,282.2	\$15,484.1	\$632.4	
EnergyWise Multifamily	3.72	\$6,032.0	\$1,551.2	\$71.2	
Home Energy Reports	4.01	\$8,799.7	\$2,196.1	\$0.0	
ENERGY STAR® Lighting	4.23	\$49,512.8	\$9,069.2	\$2,626.5	
Residential Consumer Products	3.50	\$10,389.7	\$2,241.1	\$727.9	
Residential ConnectedSolutions	4.74	\$2,702.1	\$570.6		
Energy Efficiency Education Programs			\$32.0		
Residential Pilots			\$193.5		
Community Based Initiatives - Residential			\$106.9		
Comprehensive Marketing - Residential			\$403.6		
SUBTOTAL	3.06	\$141,216.6	\$36,161.9	\$7,438.3	\$2,582.4
Regulatory					
OER			\$893.7		
EERMC			\$894.3		
SUBTOTAL			\$1,788.0		
TOTAL	4.76	\$533,493.9	\$88,224.3	\$20,722.0	\$3,242.7

Notes:

- (1) RI Test B/C Ratio = (Energy + Capacity + Resource Benefits + Economic Benefits + Carbon Benefits + NOx Benefits) / (Program Implementation + Customer Contribution + Shareholder Incentive)
- (2) Year-End Value Total from Table E-2.
- (3) Year-End Implementation Expenses by Program from Table E-1 including Finance Costs.
- (4) For the Income Eligible Multifamily program, there are some circumstances where a customer co-pay is charged. If the facility is owned by a for-profit company and there are custom measures being installed that cannot be supported by the program budget a co-pay will be negotiated with the customer.
- (5) Shareholder incentives from Table E-4.

NATIONAL GRID ELECTRIC ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND
Table E-4: National Grid 2020 EE Incentive Calculation

Energy Incentive Rate: 3.50%							
Sector	(1) Approved Spending Budget	(2) Target Incentive	(3) Annual kWh Savings Goal	(3a) Actual Spending	(3b) % of Approved Spending	(3c) Budget adjusted target kWh savings	(4) Threshold kWh Savings
Income Eligible Residential	\$16,395,115	\$573,829	6,147,236	\$ 7,204,023	43.9%	6,147,236	4,610,427
Non-Income Eligible Residential	\$42,849,338	\$1,499,727	78,077,017	\$ 35,394,964	82.6%	64,767,855	48,575,891
Commercial & Industrial	\$41,844,513	\$1,464,558	94,198,267	\$ 40,725,878	97.3%	94,198,267	70,648,700
Total	\$101,088,966	\$3,538,114	178,422,520	\$ 83,324,866	82.4%	165,113,358	123,835,019

Sector	(5) Actual kWh	(6) % of Target Savings	(7) Savings Eligible for Incentive	(8) Total Earned Incentive	(9) % of Target Incentive Achieved
Income Eligible Residential	2,587,768	42.1%	0	\$ -	0.0%
Non-Income Eligible Residential	77,803,349	120.1%	77,803,349	\$ 1,791,519	119.5%
Commercial & Industrial	76,954,814	81.7%	76,954,814	\$ 660,275	45.1%
Total	157,345,931	95.3%	154,758,163	\$ 2,451,794	69.3%

Demand Incentive Rate: 1.50%							
Sector	(1) Approved Spending Budget	(2) Target Incentive	(3) Annual kW Savings Goal	(3a) Actual Spending	(3b) % of Approved Spending	(3c) Budget adjusted target kW savings	(4) Threshold kW Savings
Income Eligible Residential	\$16,395,115	\$245,927	721	\$ 7,204,023	43.9%	721	541
Non-Income Eligible Residential	\$42,849,338	\$642,740	11,609	\$ 35,394,964	82.6%	9,590	7,192
Commercial & Industrial	\$41,844,513	\$627,668	17,463	\$ 40,725,878	97.3%	17,463	13,097
Total	\$101,088,966	\$1,516,334	29,793	\$ 83,324,866	82.4%	27,774	20,830

Sector	(5) Actual kW	(6) % of Target Savings	(7) Savings Eligible for Incentive	(8) Total Earned Incentive	(9) % of Target Incentive Achieved
Income Eligible Residential	418	58.0%	0	\$ -	0.0%
Non-Income Eligible Residential	11,859	123.7%	11,859	\$ 790,881	123.0%
Commercial & Industrial	11,264	64.5%	0	\$ -	0.0%
Total	23,540	84.8%	11,859	\$ 790,881	52.2%

Notes

- (1) Budget from 2020 EEP. Includes Implementation; excludes Regulatory Costs, Residential and Commercial Pilots, Assessments, Residential ConnectedSolutions, and Commercial ConnectedSolutions and Shareholder Incentive.
- (2) Equal to the incentive rate (3.5% for Energy, 1.5% for Demand) x Column (1)
- (3) Approved savings goal from 2020 EEP
- (3a) Actual spending includes actual Implementation Expenses from Table E-1. It excludes Regulatory Costs, Residential and Commercial Pilots, Assessments, Residential and Commercial ConnectedSolutions, and Shareholder Incentive.
- (3b) Column (3a) / Column (1)
- (3c) Column (3) * (3b), accounting for budget rules that adjust target savings depending on achieved savings and budgets to goal (3)
- (4) 75% of Target kWh Savings
- (5) Year End Savings from Table E-1
- (6) Column (6) / Column (3c)
- (7) If Column (7) is less than 75%, Column (8) = 0,
 If Column (7) is between 75% and 125%, Column (8) = Column 6;
 If Column (7) is greater than 125%, Column (8) = 125% of Column (3c) due to the incentive cap.
- (8) The shareholder is calculated as follow, where SB is the Spending Budget in the sector:
 From 75% of savings to 100% of savings: Shareholder Incentive = SB x (0.15 x % of savings achieved - 0.10)
 x 0.7 for energy savings
 x 0.3 of demand savings
 From 100% of savings to 125% of savings: Shareholder Incentive = SB x (0.05 x % of savings achieved)
- (9) Column (9) / Column (2)
- (10) For the 2020 Year End Report, a correction was made for the EnergyStar Lighting, EnergyStar HVAC, and Energywise Singlefamily programs that also impacts 2019 energy and demand savings. Some energy and demand savings that should have been recorded as negative savings were instead recorded as positive energy savings. The result of this correction decreased the 2019 year-end energy and demand savings for the EnergyStar Lighting program by 606.1 net annual Mwh and 82.9 net annual kW, for the Energy Star HVAC program by 3.6 net annual MWh and 1.3 net annual kW, and the Energywise SingleFamily program by 4.2 net annual MWh and 0.6 net annual kW. This correction decreases the 2019 shareholder incentive by \$10,050 for energy savings and \$3,922 for demand savings. The Company believes that this amount should be refunded to customers and has therefore reduced the 2020 earned shareholder incentive by \$10,050 for energy savings and \$3,922 for demand savings.

National Grid: NECO

TABLE E-5
OVERALL ANALYSIS OF ENERGY EFFICIENCY FUND BALANCE

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	TOTAL
1. Start Of Period Balance	\$3,745,234	\$6,075,350	\$12,568,565	\$16,347,223	\$20,783,327	\$26,243,558	\$3,745,234
2. Revenue	\$8,249,150	\$8,691,914	\$9,300,492	\$8,257,903	\$8,410,126	\$9,689,461	\$52,599,046
3. Monthly EE Expenses	\$5,930,928	\$2,215,308	\$5,547,594	\$3,854,877	\$2,991,791	\$5,638,774	\$26,179,273
4. Cash Flow Over/(Under)	\$2,318,222	\$6,476,606	\$3,752,898	\$4,403,026	\$5,418,335	\$4,050,687	\$26,419,774
5. End Of Period Balance Before Interest	\$6,063,457	\$12,551,956	\$16,321,463	\$20,750,249	\$26,201,663	\$30,294,244	\$30,165,008
6. Interest	\$11,893	\$16,609	\$25,760	\$33,079	\$41,895	\$50,413	\$179,649
7. End Of Period Balance After Interest	\$6,075,350	\$12,568,565	\$16,347,223	\$20,783,327	\$26,243,558	\$30,344,657	\$30,344,657
							YEAR END
							TOTAL
8. Start Of Period Balance	\$30,344,657	\$38,117,385	\$42,104,509	\$42,202,803	\$41,796,116	\$41,710,784	\$3,745,234
9. Revenue ¹⁹	\$11,641,826	\$10,942,178	\$9,662,645	\$8,320,588	\$7,930,365	\$9,172,733	\$110,269,382
10. Monthly EE Expenses	\$3,930,089	\$7,026,521	\$9,639,458	\$8,802,108	\$8,090,091	\$24,879,853	\$88,547,394
11. Cash Flow Over/(Under)	\$7,711,737	\$3,915,656	\$23,187	(\$481,519)	(\$159,726)	(\$15,707,121)	\$21,721,988
12. End Of Period Balance Before Interest	\$38,056,394	\$42,033,042	\$42,127,696	\$41,721,284	\$41,636,390	\$26,003,663	\$25,467,223
13. Interest	\$60,991	\$71,467	\$75,107	\$74,832	\$74,394	\$60,379	\$596,820
14. End Of Period Balance After Interest	\$38,117,385	\$42,104,509	\$42,202,803	\$41,796,116	\$41,710,784	\$26,064,042	\$26,064,042
15. 2020 Incentive							\$3,242,676
16. Ending Balance after Incentive							\$22,821,366
17. Income Eligible Subsidization							\$0
18. Ending Balance after Subsidization							\$22,821,366
1. Previous year's ending balance							
2. Business Objects queries for revenues							
3. SAP queries for expenses							
4. Line 2 minus Line 3							
5. Line 1 plus Line 4							
6. Interest applied							
7. Line 5 plus Line 6							
8. Previous month's ending balance							
9. Business Objects queries for revenues							
10. SAP queries for expenses							
11. Line 9 minus Line 10							
12. Line 8 plus Line 11							
13. Interest applied							
14. Line 12 plus Line 13							
15. Estimated 2020 Incentive plus prior period true-ups							
19. Revenues in July 2016 include \$1.525 million received from RGGI for the RI-E Municipal LEI							
Expenses for this program are captured in WO 90000176341							

NATIONAL GRID ELECTRIC ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND
Table E-6: National Grid 2020 Revolving Loan Funds

Large C&I Electric Revolving Loan Fund

Small Business Electric Revolving Loan Fund

<u>Income Statement</u>			<u>Income Statement</u>		
(1)	2020 Funds Available	\$7,023,410	(1)	2020 Funds Available	\$2,556,663
(2)	2020 Loan budget	\$10,000,000	(2)	2020 Loan Budget	\$3,000,000
(3)	Committed	\$5,822,689	(3)	Committed	\$0
(4)	Paid	\$5,139,202	(4)	Paid	\$784,828
(5)	Repayments	\$5,125,829	(5)	Repayments	\$1,372,695
(6)	Available 12/31/20	\$1,187,347	(6)	Available 12/31/20	\$3,144,530
(7)	Outstanding loan volume	\$10,929,056	(7)	Outstanding loan volume	\$596,714
(8)	Loan defaults during period (\$)	\$0	(8)	Loan defaults during period (\$)	\$0
(9)	Arrears over 120 days at period end (\$)	\$18,665	(9)	Arrears over 120 days at period end (\$)	\$35,172
<u>Program Impact</u>			<u>Program Impact</u>		
(10)	Number of loans	101	(10b)	Participants	615
(10b)	Participants	74	(11)	Annual Savings (Gross MWh)	10,246
(11)	Annual Savings (Gross MWh)	9,447	(12)	Annual Savings (Net MWh)	10,275
(12)	Annual Savings (Net MWh)	7,570	(13)	Lifetime Savings (Gross MWh)	124,615
(13)	Lifetime Savings (Gross MWh)	111,533	(14)	Lifetime Savings (Net MWh)	125,880
(14)	Lifetime Savings (Net MWh)	89,450	(15)	Annual Savings (Gross kW)	1,744
(15)	Annual Savings (Gross kW)	890	(16)	Annual Saving (Net kW)	1,596
(16)	Annual Saving (Net kW)	1,327	(17)	Total associated incentive volume (\$)	\$6,824,265
(17)	Total associated incentive volume (\$)	\$2,801,924	(18)	Total annual estimated energy cost savings (\$)	\$1,818,758
(18)	Total annual estimated energy cost savings (\$)	\$1,721,525			

Rhode Island Public Energy Partnership (RI PEP)

<u>Income Statement</u>		
(1)	2020 Funds Available	\$321,649
(2)	2020 Budget	\$0
(3)	Committed	\$0
(4)	Paid	\$0
(4a)	Funds Returned to OER	\$0
(5)	Repayments	\$140,828
(6)	Available 12/31/20	\$462,477
(7)	Outstanding loan volume	\$53,993
(8)	Loan defaults during period (\$)	0
(9)	Arrears over 120 days at period end (\$)	0
<u>Program Impact</u>		
(10)	Number of loans	0
(10b)	Participants	0
(11)	Annual Savings (Gross MWh)	0
(12)	Annual Savings (Net MWh)	0
(13)	Lifetime Savings (Gross MWh)	0
(14)	Lifetime Savings (Net MWh)	0
(15)	Annual Savings (Gross kW)	0
(16)	Annual Saving (Net kW)	0
(17)	Total associated incentive volume (\$)	\$0
(18)	Total annual estimated energy cost savings (\$)	\$0

Notes

- 1 Amount available as of January 1, 2020.
- 2 Budget adopted by Sales Team for 2020 operations. Budget includes projections of repayments made during 2020.
- 3 As of December 31, 2020.
- 4 As of December 31, 2020. This includes all projects paid through December 31, 2020 and the OBR associated with those projects. OBR payment are processed once the associated incentive has been paid usually in batches.
- 4a Funds returned to RI OER.
- 5 As of December 31, 2020
- 6 Fund balance as of December 31, 2020. Committed funds are subtracted from this amount.
- 7 Total outstanding loan balance. Loans lent out that still need to be paid back. This includes loans from previous years.
- 8 Total loan value in default during period.
- 9 Total loan value in arrears for over 120 days as of December 31, 2020.
- 10 As of December 31, 2020
- 10b Unique customer names for large business (one customer name can have multiple sub accounts as is in the case of a franchise). Customer accounts used for small business (not adjusted for net-to-gross).
- 11 As of December 31, 2020
- 12 As of December 31, 2020
- 13 As of December 31, 2020
- 14 As of December 31, 2020
- 15 As of December 31, 2020
- 16 As of December 31, 2020
- 17 Incentives paid out with loans.
- 18 Estimated energy cost savings to loan fund participants.

NATIONAL GRID ELECTRIC ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND

Table E-7: 2020 Heat Loans

	Single Family EnergyWise	Multifamily	HVAC	Batteries
(1) Number of loans	576	11	77	20
(2) Loan amount	\$4,353,351	\$101,772	\$796,527	\$338,712
(3) Measures				
Pre-Weatherization	36			
Weatherization	176			
Heatsystems	417			
DHW	38			
(4) Percentage of weatherization in loans	31%			

Notes

- 1 Equals the number of participants. As of December 31, 2020
- 2 Total amount of loans dispersed in 2020.
- 3 Measures financed through loans.
- 4 Percentage of Heat Loan recipients using their loan for weatherization.

Attachment 1a
Electric Costs Schedules

Schedule 1 - Program and Sector Cost Summary
DIRECT vs ALLOCATED

	(a)		(b)		(c)		(d)	
	TOTALS							
	TOTAL SPLIT 1		TOTAL SPLIT 2		Cost of services and product rebates/incentives provided to customers vs. Other Costs (1)			
	DIRECT vs ALLOCATED				Cost of services and product rebates/incentives provided to customers			
	Total Costs	DIRECT	ALLOCATED		to customers		Other Costs	
1 Residential New Construction (Electric)	\$949,497	\$890,029	\$59,468	\$643,835	\$305,662			
2 ENERGY STAR HVAC (Electric)	\$3,364,076	\$3,297,664	\$66,411	\$2,204,360	\$1,159,716			
3 EnergyWise (Electric)	\$15,484,132	\$15,167,834	\$316,298	\$13,250,352	\$2,233,780			
4 EnergyWise Multi Family (Electric)	\$1,551,180	\$1,466,033	\$85,147	\$1,047,301	\$503,879			
5 Home Energy Reports (Electric)	\$2,196,123	\$2,124,249	\$71,873	\$2,033,256	\$162,867			
6 ENERGY STAR Lighting (Electric)	\$9,069,246	\$8,770,832	\$298,413	\$7,846,010	\$1,223,236			
7 Residential Consumer Products (Electric)	\$2,241,102	\$2,178,701	\$62,402	\$1,207,884	\$1,033,218			
8 Residential ConnectedSolutions (Electric)	\$570,577	\$559,310	\$11,267	\$383,104	\$187,473			
9 Energy Efficiency Education Programs (Electric)	\$32,000	\$32,000	\$0	\$0	\$32,000			
10 Residential Pilots (Electric)	\$193,531	\$193,531	\$0	\$0	\$193,531			
11 Community Based Initiatives - Residential (Electric)	\$106,872	\$106,872	\$0	\$5,400	\$101,472			
12 Comprehensive Marketing Residential (Electric)	\$403,561	\$400,497	\$3,063	\$0	\$403,561			
13 OTHER RESIDENTIAL PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0			
14 Subtotal Non-Income Eligible Residential	\$36,161,895	\$35,187,553	\$974,343	\$28,621,502	\$7,540,394			
15 Single Family - Income Eligible Services (Electric)	\$5,961,819	\$5,673,227	\$288,592	\$4,415,640	\$1,546,179			
16 Income Eligible Multifamily (Electric)	\$1,242,204	\$1,144,489	\$97,715	\$901,677	\$340,527			
17 Subtotal Income Eligible Residential	\$7,204,023	\$6,817,716	\$386,307	\$5,317,318	\$1,886,706			
18 Large Commercial New Construction (Electric)	\$6,348,921	\$5,902,236	\$446,685	\$4,551,802	\$1,797,120			
19 Large Commercial Retrofit (Electric)	\$21,656,980	\$20,001,346	\$1,655,634	\$15,776,579	\$5,880,401			
20 Small Business Direct Install (Electric)	\$7,508,356	\$7,186,663	\$321,693	\$6,824,265	\$684,092			
21 Commercial ConnectedSolutions (Electric)	\$2,334,155	\$2,242,934	\$91,221	\$2,187,960	\$146,195			
22 Commercial Pilots (Electric)	\$4,627	\$4,627	\$0	\$0	\$4,627			
23 Comprehensive Marketing C&I (Electric)	\$0	\$0	\$0	\$0	\$0			
24 Community Based Initiatives - C&I (Electric)	\$600	\$600	\$0	\$600	\$0			
25 Finance Costs (Electric)	\$5,216,666	\$5,216,666	\$0	\$5,216,666	\$0			
26 OTHER C&I PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0			
27 Subtotal Commercial & Industrial	\$43,070,306	\$40,555,073	\$2,515,232	\$34,557,871	\$8,512,435			
28 DER (Electric)	\$893,692	\$893,692	\$0	\$0	\$893,692			
29 EERMC (Electric)	\$894,346	\$894,346	\$0	\$0	\$894,346			
30 Subtotal Regulatory	\$1,788,038	\$1,788,038	\$0	\$0	\$1,788,038			
31 TOTAL All Sectors	\$88,224,263	\$84,348,381	\$3,875,882	\$68,496,690	\$19,727,572			
SRP PROGRAMS (Electric)	\$20,512	\$20,512	\$0	\$0	\$20,512			
OTHER COSTS NOT LISTED ABOVE (Electric)	\$323,218	\$323,218	\$0	\$323,131	\$87			

	(e)		(f)		(g)		(h)		(i)		(j)		(k)		(l)		(m)		(n)		(o)		(p)	
	DIRECT COSTS												ALLOCATED COSTS											
	NO INCENTIVE (2)						Cost of services and product rebates/incentives provided to customers						Other Costs				Cost of services and product rebates/incentives provided to customers							
National Grid Direct Labor & Employee Expense	Direct External		Direct "Not Labor Expense, External"		National Grid Direct Labor & Employee Expense		Direct External		Direct "Not Labor Expense, External"		National Grid Allocated Labor & Employee Expense		Allocated External		Allocated "Not Labor Expense, External"		National Grid Allocated Labor & Employee Expense		Allocated External		Allocated "Not Labor Expense, Vendor"			
	\$37,904	\$208,290	\$0	\$0	\$643,835	\$0	\$36,335	\$23,133	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$38,017	\$1,055,288	\$0	\$0	\$2,204,360	\$0	\$40,057	\$26,355	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$38,185	\$1,879,298	\$0	\$0	\$13,250,352	\$0	\$193,656	\$122,644	-\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$29,167	\$389,565	\$0	\$0	\$1,047,301	\$0	\$53,107	\$32,040	-\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$3,496	\$87,498	\$0	\$0	\$2,033,256	\$0	\$46,098	\$25,816	-\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$40,438	\$884,384	\$0	\$0	\$7,846,010	\$0	\$183,647	\$114,769	-\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$50,279	\$920,538	\$0	\$0	\$1,207,884	\$0	\$36,864	\$25,538	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$9,997	\$166,209	\$0	\$0	\$383,104	\$0	\$6,511	\$4,756	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$185	\$31,815	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$2,828	\$190,703	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$6,303	\$95,169	\$0	\$0	\$5,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$6,604	\$393,893	\$0	\$0	\$0	\$0	\$2,310	\$754	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$263,402	\$6,302,649	\$0	\$0	\$28,621,502	\$0	\$598,545	\$375,805	-\$7	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$17,589	\$1,239,997	\$0	\$0	\$4,415,640	\$0	\$171,245	\$117,349	-\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$22,669	\$220,143	\$0	\$0	\$901,677	\$0	\$61,172	\$36,543	-\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$40,258	\$1,460,140	\$0	\$0	\$5,317,318	\$0	\$232,417	\$153,893	-\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$149,660	\$1,200,775	\$0	\$0	\$4,551,815	-\$13	\$303,315	\$143,372	-\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$73,175	\$3,487,594	-\$1	\$0	\$15,776,579	\$0	\$1,175,112	\$480,528	-\$7	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$97,574	\$264,825	\$0	\$0	\$6,824,265	\$0	\$189,256	\$132,438	-\$2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$20,387	\$34,588	\$0	\$0	\$2,187,960	\$0	\$69,623	\$21,598	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$4,627	\$760	-\$760	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$0	\$0	\$0	\$0	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$0	\$0	\$0	\$0	\$5,216,666	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$1,009,422	\$4,988,541	-\$761	\$0	\$34,557,884	-\$13	\$1,737,306	\$777,936	-\$10	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$893,692	\$893,692	\$0	\$0	\$893,692	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$0	\$894,346	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$0	\$894,346	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$0	\$1,788,038	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$1,313,083	\$14,339,368	-\$761	\$0	\$68,496,704	-\$13	\$2,568,269	\$1,307,634	-\$20	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$5,402	\$15,110	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
\$87	\$0	\$0	\$0	\$323,131	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	

1 In the 2020 Energy Efficiency Annual Plan filing, this cost category was referred to as "Rebates and Other Incentives"
2 (2) These Costs do not include costs relating to the cost of services and product rebates/incentives provided to customers

Schedule 1a - Program and Sector Cost Summary

By Report Category

		(d) (Schedule 4) col a	(e) (Schedule 5) col a	(f) (Schedule 6) col a	(g) (Schedule 7) col a	(h) (Schedule 8) col a	
	Total Costs	Program Planning & Admin.	Marketing	Cost of services and product rebates/incentives provided to customers (1)	STAT	Evaluation & Research	
1	Residential New Construction (Electric)	\$949,497	\$73,180	\$7	\$643,835	\$204,927	\$27,548
2	ENERGY STAR HVAC (Electric)	\$3,364,076	\$67,500	\$278,198	\$2,204,360	\$769,240	\$44,778
3	EnergyWise (Electric)	\$15,484,132	\$287,541	\$312,370	\$13,250,352	\$1,458,457	\$175,412
4	EnergyWise Multi Family (Electric)	\$1,551,180	\$76,180	\$37,803	\$1,047,301	\$219,277	\$170,619
5	Home Energy Reports (Electric)	\$2,196,123	\$62,320	\$32	\$2,033,256	\$8,665	\$91,849
6	ENERGY STAR Lighting (Electric)	\$9,069,246	\$317,699	\$514,862	\$7,846,010	\$339,573	\$51,100
7	Residential Consumer Products (Electric)	\$2,241,102	\$64,592	\$390,403	\$1,207,884	\$577,672	\$551
8	Residential ConnectedSolutions (Electric)	\$570,577	\$57,693	\$1	\$383,104	\$129,780	\$0
9	Energy Efficiency Education Programs (Electric)	\$32,000	\$0	\$32,000	\$0	\$0	\$0
10	Residential Pilots (Electric)	\$193,531	\$0	\$0	\$0	\$193,531	\$0
11	Community Based Initiatives - Residential (Electric)	\$106,872	\$6,274	\$95,197	\$5,400	\$0	\$0
12	Comprehensive Marketing Residential (Electric)	\$403,561	\$1,917	\$401,644	\$0	\$0	\$0
13	OTHER RESIDENTIAL PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0
14	Subtotal Non-Income Eligible Residential	\$36,161,895	\$1,014,897	\$2,062,516	\$28,621,502	\$3,901,123	\$561,857
15	Single Family - Income Eligible Services (Electric)	\$5,961,819	\$246,090	\$141,137	\$4,415,640	\$1,043,780	\$115,172
16	Income Eligible Multifamily (Electric)	\$1,242,204	\$86,027	\$7,938	\$901,677	\$128,412	\$118,150
17	Subtotal Income Eligible Residential	\$7,204,023	\$332,118	\$149,075	\$5,317,318	\$1,172,191	\$233,322
18	Large Commercial New Construction (Electric)	\$6,348,921	\$193,510	\$290,168	\$4,551,802	\$1,128,208	\$185,233
19	Large Commercial Retrofit (Electric)	\$21,656,980	\$771,518	\$250,548	\$15,776,579	\$4,262,955	\$595,381
20	Small Business Direct Install (Electric)	\$7,508,356	\$252,920	\$201,537	\$6,824,265	\$142,936	\$86,698
21	Commercial ConnectedSolutions (Electric)	\$2,334,155	\$79,060	\$42	\$2,187,960	\$67,093	\$0
22	Commercial Pilots (Electric)	\$4,627	\$0	\$0	\$0	\$4,627	\$0
23	Comprehensive Marketing C&I (Electric)	\$0	\$0	\$0	\$0	\$0	\$0
24	Community Based Initiatives - C&I (Electric)	\$600	\$0	\$0	\$600	\$0	\$0
25	Finance Costs (Electric)	\$5,216,666	\$0	\$0	\$5,216,666	\$0	\$0
26	OTHER C&I PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0
27	Subtotal Commercial & Industrial	\$43,070,306	\$1,297,009	\$742,295	\$34,557,871	\$5,605,819	\$867,312
28	OER (Electric)	\$893,692	\$893,692	\$0	\$0	\$0	\$0
29	EERMC (Electric)	\$894,346	\$894,346	\$0	\$0	\$0	\$0
30	Subtotal Regulatory	\$1,788,038	\$1,788,038	\$0	\$0	\$0	\$0
31	TOTAL All Sectors	\$88,224,263	\$4,432,062	\$2,953,886	\$68,496,690	\$10,679,133	\$1,662,491
	SRP PROGRAMS (Electric)	\$20,512	\$5,304	\$15,208	\$0	\$0	\$0
	OTHER COSTS NOT LISTED ABOVE (Electric)	\$323,218	\$0	\$0	\$323,131	\$87	\$0

Schedule 2 - Labor and Employee Expenses

	(a) (b)+(c)	(b) (e)+(h)	(c) (f)+(i)	(d) (e)+(f)	(e)	(f)	(g) (h)+(i)	(h)	(i)
	Total National Grid Labor + Expenses	National Grid Direct Labor + Expenses	National Grid Allocated Labor + Expenses	Total National Grid Labor	National Grid Direct Labor	National Grid Allocated Labor	Total National Grid Employee Expenses	National Grid Direct Employee Expenses	National Grid Allocated Employee Expenses
1 Residential New Construction (Electric)	\$74,239	\$37,904	\$36,335	\$72,170	\$37,186	\$34,984	\$2,068	\$718	\$1,351
2 ENERGY STAR HVAC (Electric)	\$78,074	\$38,017	\$40,057	\$76,025	\$37,608	\$38,417	\$2,049	\$409	\$1,640
3 EnergyWise (Electric)	\$231,841	\$38,185	\$193,656	\$224,359	\$38,172	\$186,187	\$7,482	\$13	\$7,469
4 EnergyWise Multi Family (Electric)	\$82,274	\$29,167	\$53,107	\$80,412	\$29,139	\$51,273	\$1,862	\$28	\$1,834
5 Home Energy Reports (Electric)	\$49,554	\$3,496	\$46,058	\$48,053	\$3,496	\$44,557	\$1,501	\$0	\$1,501
6 ENERGY STAR Lighting (Electric)	\$224,085	\$40,438	\$183,647	\$216,885	\$40,384	\$176,501	\$7,200	\$55	\$7,146
7 Residential Consumer Products (Electric)	\$87,143	\$50,279	\$36,864	\$85,398	\$50,171	\$35,227	\$1,744	\$108	\$1,637
8 Residential ConnectedSolutions (Electric)	\$16,508	\$9,997	\$6,511	\$16,000	\$9,785	\$6,215	\$508	\$212	\$297
9 Energy Efficiency Education Programs (Electric)	\$185	\$185	\$0	\$185	\$185	\$0	\$0	\$0	\$0
10 Residential Pilots (Electric)	\$2,828	\$2,828	\$0	\$2,828	\$2,828	\$0	\$0	\$0	\$0
11 Community Based Initiatives - Residential (Electric)	\$6,303	\$6,303	\$0	\$6,274	\$6,274	\$0	\$28	\$28	\$0
12 Comprehensive Marketing Residential (Electric)	\$8,914	\$6,604	\$2,310	\$8,726	\$6,531	\$2,195	\$187	\$73	\$114
13 OTHER RESIDENTIAL PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14 Subtotal Non-Income Eligible Residential	\$861,947	\$263,402	\$598,545	\$837,317	\$261,760	\$575,556	\$24,631	\$1,642	\$22,989
15 Single Family - Income Eligible Services (Electric)	\$188,834	\$17,589	\$171,245	\$181,742	\$17,516	\$164,225	\$7,092	\$73	\$7,019
16 Income Eligible Multifamily (Electric)	\$83,841	\$22,669	\$61,172	\$81,726	\$22,641	\$59,085	\$2,115	\$28	\$2,087
17 Subtotal Income Eligible Residential	\$272,675	\$40,258	\$232,417	\$263,468	\$40,157	\$223,310	\$9,207	\$101	\$9,107
18 Large Commercial New Construction (Electric)	\$452,974	\$149,660	\$303,315	\$427,611	\$139,592	\$288,019	\$25,363	\$10,067	\$15,296
19 Large Commercial Retrofit (Electric)	\$1,912,287	\$737,175	\$1,175,112	\$1,834,860	\$719,900	\$1,114,961	\$77,427	\$17,275	\$60,152
20 Small Business Direct Install (Electric)	\$286,830	\$97,574	\$189,256	\$280,958	\$97,407	\$183,550	\$5,873	\$167	\$5,706
21 Commercial ConnectedSolutions (Electric)	\$90,010	\$20,387	\$69,623	\$85,522	\$19,856	\$65,665	\$4,488	\$530	\$3,958
22 Commercial Pilots (Electric)	\$4,627	\$4,627	\$0	\$4,627	\$4,627	\$0	\$0	\$0	\$0
23 Comprehensive Marketing C&I (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
24 Community Based Initiatives - C&I (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25 Finance Costs (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
26 OTHER C&I PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
27 Subtotal Commercial & Industrial	\$2,746,729	\$1,009,422	\$1,737,306	\$2,633,578	\$981,383	\$1,652,196	\$113,150	\$28,040	\$85,111
28 OER (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
29 EERMC (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
30 Subtotal Regulatory	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
31 TOTAL All Sectors	\$3,881,351	\$1,313,083	\$2,568,269	\$3,734,363	\$1,283,301	\$2,451,062	\$146,989	\$29,782	\$117,206
SRP PROGRAMS (Electric)	\$5,402	\$5,402	\$0	\$5,402	\$5,402	\$0	\$0	\$0	\$0
OTHER COSTS NOT LISTED ABOVE (Electric)	\$87	\$87	\$0	\$87	\$87	\$0	\$0	\$0	\$0

Schedule 3 - Expenses Categorized as Vendor Costs in Company's Systems¹

	(a)	(b)	(c) (a) - (b)	(d)	(e)	(f) (d) + (e)	(g) (c) + (f)
	Total Costs of Services, Products, and Rebates Provided to Customers.2 (also referred to as "Rebates and Other Customer Incentives")	Rebate Payments Made Directly to Customers by National Grid and Rebates Paid to PEX's to Whom Customer Rebates were Assigned	Payments to Service Vendors for Costs Relating to Services, Products, and Processing Rebates (excluding costs included in col. b)3	Direct "External Costs"4 from Vendor Services	"External Costs" from Vendors Originating from an Allocation	Total of Vendor Costs Categorized as "External Costs" from Service Vendors (excluding costs included in columns a, b & c)	Total Costs from Service Vendors, Excluding Rebate Payments Made Directly to Customers by National Grid
1 Residential New Construction (Electric)	\$643,835	\$0	\$643,835	\$208,290	\$23,133	\$231,423	\$875,258
2 ENERGY STAR HVAC (Electric)	\$2,204,360	\$0	\$2,204,360	\$1,055,288	\$26,355	\$1,081,643	\$3,286,002
3 EnergyWise (Electric)	\$13,250,352	\$0	\$13,250,352	\$1,879,298	\$122,644	\$2,001,941	\$15,252,293
4 EnergyWise Multi Family (Electric)	\$1,047,301	\$0	\$1,047,301	\$389,565	\$32,040	\$421,605	\$1,468,906
5 Home Energy Reports (Electric)	\$2,033,256	\$0	\$2,033,256	\$87,498	\$25,816	\$113,314	\$2,146,570
6 ENERGY STAR Lighting (Electric)	\$7,846,010	\$0	\$7,846,010	\$884,384	\$114,769	\$999,152	\$8,845,163
7 Residential Consumer Products (Electric)	\$1,207,884	\$0	\$1,207,884	\$920,538	\$25,538	\$946,076	\$2,153,960
8 Residential ConnectedSolutions (Electric)	\$383,104	\$0	\$383,104	\$166,209	\$4,756	\$170,965	\$554,069
9 Energy Efficiency Education Programs (Electric)	\$0	\$0	\$0	\$31,815	\$0	\$31,815	\$31,815
10 Residential Pilots (Electric)	\$0	\$0	\$0	\$190,703	\$0	\$190,703	\$190,703
11 Community Based Initiatives - Residential (Electric)	\$5,400	\$0	\$5,400	\$95,169	\$0	\$95,169	\$100,569
12 Comprehensive Marketing Residential (Electric)	\$0	\$0	\$0	\$393,893	\$754	\$394,647	\$394,647
13 OTHER RESIDENTIAL PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14 Subtotal Non-Income Eligible Residential	\$28,621,502	\$0	\$28,621,502	\$6,302,649	\$375,805	\$6,678,454	\$35,299,955
15 Single Family - Income Eligible Services (Electric)	\$4,415,640	\$0	\$4,415,640	\$1,239,997	\$117,349	\$1,357,347	\$5,772,987
16 Income Eligible Multifamily (Electric)	\$901,677	\$0	\$901,677	\$220,143	\$36,543	\$256,686	\$1,158,364
17 Subtotal Income Eligible Residential	\$5,317,318	\$0	\$5,317,318	\$1,460,140	\$153,893	\$1,614,033	\$6,931,351
18 Large Commercial New Construction (Electric)	\$4,551,815	\$1,817,140	\$2,734,675	\$1,200,775	\$143,372	\$1,344,147	\$4,078,822
19 Large Commercial Retrofit (Electric)	\$15,776,579	\$1,018,178	\$14,758,401	\$3,487,594	\$480,528	\$3,968,122	\$18,726,522
20 Small Business Direct Install (Electric)	\$6,824,265	\$0	\$6,824,265	\$264,825	\$132,438	\$397,263	\$7,221,528
21 Commercial ConnectedSolutions (Electric)	\$2,187,960	\$0	\$2,187,960	\$34,588	\$21,598	\$56,186	\$2,244,146
22 Commercial Pilots (Electric)	\$0	\$0	\$0	\$760	\$0	\$760	\$760
23 Comprehensive Marketing C&I (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
24 Community Based Initiatives - C&I (Electric)	\$600	\$0	\$600	\$0	\$0	\$0	\$600
25 Finance Costs (Electric)	\$5,216,666	\$0	\$5,216,666	\$0	\$0	\$0	\$5,216,666
26 OTHER C&I PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
27 Subtotal Commercial & Industrial	\$34,557,884	\$2,835,318	\$31,722,566	\$4,988,541	\$777,936	\$5,766,477	\$37,489,043
28 OER (Electric)	\$0	\$0	\$0	\$893,692	\$0	\$893,692	\$893,692
29 EERMC (Electric)	\$0	\$0	\$0	\$894,346	\$0	\$894,346	\$894,346
30 Subtotal Regulatory	\$0	\$0	\$0	\$1,788,038	\$0	\$1,788,038	\$1,788,038
31 TOTAL All Sectors	\$68,496,704	\$2,835,318	\$65,661,386	\$14,539,368	\$1,307,634	\$15,847,002	\$81,508,388
SRP PROGRAMS (Electric)	\$0	\$0	\$0	\$15,110	\$0	\$15,110	\$15,110
OTHER COSTS NOT LISTED ABOVE (Electric)	\$323,131	\$0	\$323,131	\$0	\$0	\$0	\$323,131

¹ The Company's accounting system treats all payments made directly to customers and vendors as one category of vendor expenses.

Rebates paid to customers through service contracts with vendors are included in the service cost of the vendor.

² This category has formally been labeled in prior year annual reports as "Rebates and Other Customer Incentives" in annual reports.

³ This cost category includes service costs for customers plus rebates/incentives processed and paid to customers by the vendor, but excludes rebates paid directly to customers by the Company in col (b).

⁴ The term "External Costs" has been used in Company reports to identify a subset of vendor costs not included in "Rebates and Other Customer Incentives".

⁵ In 2020, Home Energy Reports was categorized under column (c) in this schedule, starting in the 2021 Annual Plan, Home Energy Reports costs currently categorized under column (c) will be recategorized under column (f)

Schedule 4 - Program Planning & Administration

	(a) (b)+(e)+(h)	(b) (c)+(d)	(c)	(d)	(e) (f)+(g)	(f)	(g)	(h) (i)+(j)	(i)	(j)	(h) (i)+(j)	(i)	(j)
	Total Costs	Total National Grid Labor Costs	National Grid Direct Labor	National Grid Allocated Labor	Total National Grid Employee Expenses	National Grid Direct Employee Expenses	National Grid Allocated Employee Expenses	External Services Costs	Direct External Services Costs	External Services Costs Originating from an Allocation	Other Costs any	(if Other Direct Costs	Other Costs Originating from an Allocation
1 Residential New Construction (Electric)	\$73,180	\$53,304	\$26,177	\$27,126	\$1,544	\$381	\$1,164	\$18,333	\$0	\$18,333	\$0	\$0	\$0
2 ENERGY STAR HVAC (Electric)	\$67,500	\$43,863	\$11,066	\$32,797	\$1,407	\$0	\$1,407	\$22,231	\$66	\$22,165	\$0	\$0	\$0
3 EnergyWise (Electric)	\$287,541	\$172,957	\$13,545	\$159,412	\$6,851	\$13	\$6,838	\$107,735	\$0	\$107,735	-\$2	\$0	-\$2
4 EnergyWise Multi Family (Electric)	\$76,180	\$49,153	\$12,083	\$37,069	\$1,614	\$24	\$1,590	\$25,414	\$361	\$25,052	-\$1	\$0	-\$1
5 Home Energy Reports (Electric)	\$62,320	\$37,461	\$2,873	\$34,589	\$1,484	\$0	\$1,484	\$23,376	\$0	\$23,376	-\$1	\$0	-\$1
6 ENERGY STAR Lighting (Electric)	\$317,699	\$180,974	\$22,474	\$158,500	\$6,853	\$55	\$6,799	\$129,875	\$22,756	\$107,119	-\$2	\$0	-\$2
7 Residential Consumer Products (Electric)	\$64,592	\$43,411	\$14,130	\$29,281	\$1,298	\$42	\$1,256	\$19,883	\$94	\$19,789	\$0	\$0	\$0
8 Residential ConnectedSolutions (Electric)	\$57,693	\$14,009	\$8,841	\$5,169	\$292	\$71	\$222	\$43,391	\$40,101	\$3,290	\$0	\$0	\$0
9 Energy Efficiency Education Programs (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10 Residential Pilots (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11 Community Based Initiatives - Residential (Electric)	\$6,274	\$6,274	\$6,274	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12 Comprehensive Marketing Residential (Electric)	\$1,917	\$1,115	\$0	\$1,115	\$48	\$0	\$48	\$754	\$0	\$754	\$0	\$0	\$0
13 OTHER RESIDENTIAL PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14 Subtotal Non-Income Eligible Residential	\$1,014,897	\$602,522	\$117,464	\$485,058	\$21,391	\$585	\$20,806	\$390,991	\$63,378	\$327,614	-\$7	\$0	-\$7
15 Single Family - Income Eligible Services (Electric)	\$246,090	\$148,947	\$13,884	\$135,063	\$5,866	\$73	\$5,793	\$91,279	\$0	\$91,279	-\$2	\$0	-\$2
16 Income Eligible Multifamily (Electric)	\$86,027	\$55,035	\$11,945	\$43,089	\$1,872	\$24	\$1,848	\$29,121	\$0	\$29,121	-\$1	\$0	-\$1
17 Subtotal Income Eligible Residential	\$332,118	\$203,981	\$25,829	\$178,152	\$7,739	\$97	\$7,642	\$120,400	\$0	\$120,400	-\$3	\$0	-\$3
18 Large Commercial New Construction (Electric)	\$193,510	\$117,445	\$31,905	\$85,540	\$1,693	\$381	\$1,312	\$74,374	\$833	\$73,541	-\$1	\$0	-\$1
19 Large Commercial Retrofit (Electric)	\$771,518	\$385,301	\$36,551	\$348,750	\$5,417	\$67	\$5,350	\$380,805	\$80,975	\$299,830	-\$5	\$0	-\$5
20 Small Business Direct Install (Electric)	\$252,920	\$136,461	\$9,862	\$126,599	\$1,942	\$0	\$1,942	\$114,518	\$5,677	\$108,841	-\$2	\$0	-\$2
21 Commercial ConnectedSolutions (Electric)	\$79,060	\$31,191	\$13,950	\$17,241	\$437	\$173	\$264	\$47,432	\$33,203	\$14,229	\$0	\$0	\$0
22 Commercial Pilots (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
23 Comprehensive Marketing C&I (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
24 Community Based Initiatives - C&I (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25 Finance Costs (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
26 OTHER C&I PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
27 Subtotal Commercial & Industrial	\$1,297,009	\$670,398	\$92,268	\$578,130	\$9,489	\$620	\$8,869	\$617,130	\$120,688	\$496,442	-\$8	\$0	-\$8
28 OER (Electric)	\$893,692	\$0	\$0	\$0	\$0	\$0	\$0	\$893,692	\$893,692	\$0	\$0	\$0	\$0
29 EERMC (Electric)	\$894,346	\$0	\$0	\$0	\$0	\$0	\$0	\$894,346	\$894,346	\$0	\$0	\$0	\$0
30 Subtotal Regulatory	\$1,788,038	\$0	\$0	\$0	\$0	\$0	\$0	\$1,788,038	\$1,788,038	\$0	\$0	\$0	\$0
31 TOTAL All Sectors	\$4,432,062	\$1,476,902	\$235,562	\$1,241,340	\$38,619	\$1,302	\$37,317	\$2,916,560	\$1,972,104	\$944,456	-\$18	\$0	-\$18
SRP PROGRAMS (Electric)	\$5,304	\$5,304	\$5,304	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
OTHER COSTS NOT LISTED ABOVE (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Schedule 5 - Marketing

	(a) (b)+(e)+(h)+(k)	(b) (c)+(d)	(c)	(d)	(e) (f)+(g)	(f)	(g)	(h) (i)+(j)	(i)	(j)	(k) (l)+(m)	(l)	(m)
	Total Costs	Total National Grid Labor Costs	National Grid Direct Labor	National Grid Allocated Labor	Total National Grid Employee Expenses	National Grid Direct Employee Expenses	National Grid Allocated Employee Expenses	External Services Costs	Direct External Services Costs	External Services Costs Originating from an Allocation	Other Costs any	(if Other Direct Costs	Other Costs Originating from an Allocation
1 Residential New Construction (Electric)	\$7	\$6	\$0	\$6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2 ENERGY STAR HVAC (Electric)	\$278,198	\$4,164	\$3,448	\$716	\$120	\$76	\$44	\$273,914	\$273,914	\$0	\$0	\$0	\$0
3 EnergyWise (Electric)	\$312,370	\$20,089	\$18,981	\$1,108	\$68	\$0	\$68	\$292,213	\$292,213	\$0	\$0	\$0	\$0
4 EnergyWise Multi Family (Electric)	\$37,803	\$6,578	\$6,456	\$122	\$8	\$0	\$8	\$31,217	\$31,217	\$0	\$0	\$0	\$0
5 Home Energy Reports (Electric)	\$32	\$30	\$0	\$30	\$2	\$0	\$2	\$0	\$0	\$0	\$0	\$0	\$0
6 ENERGY STAR Lighting (Electric)	\$514,862	\$11,147	\$9,506	\$1,641	\$101	\$0	\$101	\$503,615	\$503,615	\$0	\$0	\$0	\$0
7 Residential Consumer Products (Electric)	\$390,403	\$37,516	\$36,041	\$1,475	\$152	\$62	\$91	\$352,734	\$352,734	\$0	\$0	\$0	\$0
8 Residential ConnectedSolutions (Electric)	\$1	\$1	\$0	\$1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9 Energy Efficiency Education Programs (Electric)	\$32,000	\$185	\$185	\$0	\$0	\$0	\$0	\$31,815	\$31,815	\$0	\$0	\$0	\$0
10 Residential Pilots (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11 Community Based Initiatives - Residential (Electric)	\$95,197	\$0	\$0	\$0	\$28	\$28	\$0	\$95,169	\$95,169	\$0	\$0	\$0	\$0
12 Comprehensive Marketing Residential (Electric)	\$401,644	\$7,611	\$6,531	\$1,080	\$140	\$73	\$66	\$393,893	\$393,893	\$0	\$0	\$0	\$0
13 OTHER RESIDENTIAL PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14 Subtotal Non-Income Eligible Residential	\$2,062,516	\$87,328	\$81,148	\$6,180	\$619	\$239	\$380	\$1,974,570	\$1,974,570	\$0	\$0	\$0	\$0
15 Single Family - Income Eligible Services (Electric)	\$141,137	\$4,040	\$3,632	\$408	\$25	\$0	\$25	\$137,072	\$137,072	\$0	\$0	\$0	\$0
16 Income Eligible Multifamily (Electric)	\$7,938	\$26	\$0	\$26	\$2	\$0	\$2	\$7,911	\$7,911	\$0	\$0	\$0	\$0
17 Subtotal Income Eligible Residential	\$149,075	\$4,066	\$3,632	\$434	\$27	\$0	\$27	\$144,983	\$144,983	\$0	\$0	\$0	\$0
18 Large Commercial New Construction (Electric)	\$290,168	\$6,008	\$0	\$6,008	\$661	\$212	\$449	\$283,499	\$283,499	\$0	\$0	\$0	\$0
19 Large Commercial Retrofit (Electric)	\$250,548	\$15,874	\$11,279	\$4,595	\$1,109	\$766	\$343	\$233,565	\$233,565	\$0	\$0	\$0	\$0
20 Small Business Direct Install (Electric)	\$201,537	\$12,831	\$7,554	\$5,276	\$394	\$0	\$394	\$188,312	\$188,312	\$0	\$0	\$0	\$0
21 Commercial ConnectedSolutions (Electric)	\$42	\$39	\$0	\$39	\$3	\$0	\$3	\$0	\$0	\$0	\$0	\$0	\$0
22 Commercial Pilots (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
23 Comprehensive Marketing C&I (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
24 Community Based Initiatives - C&I (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25 Finance Costs (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
26 OTHER C&I PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
27 Subtotal Commercial & Industrial	\$742,295	\$34,752	\$18,833	\$15,919	\$2,167	\$979	\$1,188	\$705,376	\$705,376	\$0	\$0	\$0	\$0
28 OER (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
29 EERMC (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
30 Subtotal Regulatory	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
31 TOTAL All Sectors	\$2,953,886	\$126,145	\$103,613	\$22,533	\$2,813	\$1,217	\$1,596	\$2,824,928	\$2,824,928	\$0	\$0	\$0	\$0
SRP PROGRAMS (Electric)	\$15,208	\$98	\$98	\$0	\$0	\$0	\$0	\$15,110	\$15,110	\$0	\$0	\$0	\$0
OTHER COSTS NOT LISTED ABOVE (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Schedule 6 - Cost of services and product rebates/incentives provided to customers (1)

Annual threshold > \$100,000 for evaluation of allocation between Col. (b) vs. Col. (c)
 Default Assumption, expenses allocated to Col. (c)

	(a)	(b)	(c)	(d)
	(b)+(c)			
	Total payments for services and product rebates/incentives for customers which are paid directly to a customer or provided to customer via a vendor	Rebate/Incentive Payments Directly Paid to Customers	Payments for Services and Product Rebates/Incentives for customers which are made to vendors and then provided to customers	Description of External Payments
1 Residential New Construction (Electric)	\$643,835	\$0	\$643,835	Payments are made to external vendor(s) that are then used to provide rebates to customers for approved energy efficiency products that are installed in new customer dwellings. Payments also include a home performance testing service at no cost to the customer.
2 ENERGY STAR HVAC (Electric)	\$2,204,360	\$0	\$2,204,360	Payments are made to external vendor(s) that are then used to provide rebates to customers for approved energy efficiency HVAC products that are installed in rate payer customer dwellings as well as to provide zero interest loans to customers for approved energy efficiency HVAC products. Payments are made to external vendors to provide contractor training and quality control inspections for the installation of approved energy efficiency HVAC products.
3 EnergyWise (Electric)	\$13,250,352	\$0	\$13,250,352	Payments are made to external vendor(s) that installed energy efficiency products at negotiated, discounted prices in single family customer dwellings. Payments also include a service to customers in the form of no cost energy assessments. Payments are also made to external vendor(s) that are then used to provide zero interest loans to customers for weatherization.
4 EnergyWise Multi Family (Electric)	\$1,047,301	\$0	\$1,047,301	Payments are made to external vendors that are then used to discount approved energy efficiency products that are installed in multifamily customer dwellings. Payments also include a service to customers in the form of no cost energy assessments. Payments are also made to external vendor(s) that are then used to provide zero interest loans to customers for weatherization.
5 Home Energy Reports (Electric)	\$2,033,256	\$0	\$2,033,256	Payments include costs associated with the delivery of the program. The HER program does not feature direct customer incentives or rebates. Instead the funds in this category are utilized in the production and delivery of Home Energy Reports. The costs associated with this effort are categorized as 'Rebates and Other Incentives' because the reports drive customer actions to change energy consumption behaviors, resulting in energy cost savings to those customers and benefits to all customers.
6 ENERGY STAR Lighting (Electric)	\$7,846,010	\$0	\$7,846,010	Energy Star Lighting Products receive energy efficiency incentives to bring down the cost of the product for the customer. Payments are made to external vendors for products receiving the incentive. Customers then purchase these Energy Star Lighting products at a discounted price.
7 Residential Consumer Products (Electric)	\$1,207,884	\$0	\$1,207,884	Customers purchase Energy Star Consumer Products and apply for energy efficiency rebate. Vendor qualifies the rebate for the customer and then bills the Company for the customer incentives. In some instances, through special promotions, customers purchase ENERGY STAR Consumer Products at discount price. Vendor then receives payment on incentives applied to products sold.
8 Residential ConnectedSolutions (Electric)	\$383,104	\$0	\$383,104	Payments are made to external vendor(s) that are then used to pay customers an incentive for participation in the program. In some cases, customers have elected to receive their incentive payment directly from National Grid, in these cases the Company directly pays the customer the incentive.
9 Energy Efficiency Education Programs (Electric)	\$0	\$0	\$0	N/A
10 Residential Pilots (Electric)	\$0	\$0	\$0	Payments can vary depending on the pilot, and in 2020, the Zero Energy Homes Pilot was the only Pilot. For this pilot, payments were made to external vendor(s) that are then used to provide rebates to customers for approved energy efficiency products that are installed in new customer dwellings in addition to thermal performance of the home. Payments also include in-field education and a home performance testing service at no cost to the customer.
11 Community Based Initiatives - Residential (Electric)	\$5,400	\$0	\$5,400	Payments can either be made directly to a community or payments can be made to external vendor(s) that are then used to discount approved energy efficiency products for communities participating in the Community Based Initiative.
12 Comprehensive Marketing Residential (Electric)	\$0	\$0	\$0	N/A
13 OTHER RESIDENTIAL PROGRAMS (Electric)	\$0	\$0	\$0	N/A
14 Subtotal Non-Income Eligible Residential	\$28,621,502	\$0	\$28,621,502	
15 Single Family - Income Eligible Services (Electric)	\$4,415,640	\$0	\$4,415,640	Payments are made to external vendors that are then used to cover 100% of the cost for approved energy efficiency weatherization, heating systems and appliances that are installed in single family income eligible customer dwellings. Payments also include a no cost service to customers in the form of no cost energy assessments.
16 Income Eligible Multifamily (Electric)	\$901,677	\$0	\$901,677	Payments are made to external vendors that are then used to cover 100% of the cost for approved energy efficiency products that are installed in multifamily customer dwellings. Payments also include a no cost service to customers in the form of no cost energy assessments.
17 Subtotal Income Eligible Residential	\$5,317,318	\$0	\$5,317,318	
18 Large Commercial New Construction (Electric)	\$4,551,802	\$1,817,140	\$2,734,662	Payments are made to external vendor(s) that are then used to discount approved energy efficiency products that are installed in customer facilities. Payments are also made directly to customers for the installation of approved energy efficiency measures.
19 Large Commercial Retrofit (Electric)	\$15,776,579	\$1,018,178	\$14,758,401	Payments are made to external vendor(s) that are then used to discount approved energy efficiency products that are installed in customer facilities. Payments are also made directly to customers for the installation of approved energy efficiency measures.
20 Small Business Direct Install (Electric)	\$6,824,265	\$0	\$6,824,265	Payments are made to external vendor(s) that are then used to discount approved energy efficiency products that are installed in customer facilities. Payments also include no cost services to customers including no cost energy assessments.
21 Commercial ConnectedSolutions (Electric)	\$2,187,960	\$0	\$2,187,960	Payments are made to external vendor(s) that are then used to pay customers an incentive for participation in the program. The external vendor(s) retain a portion of the incentive payments.
22 Commercial Pilots (Electric)	\$0	\$0	\$0	Payments can vary depending on the pilot. In 2020 the only Commercial Electric pilot was the Zero Energy Buildings pilot. For this pilot, incentive payments are made directly to customers. Payments also include building verification and certification for Zero Buildings, at no cost to the customer.
23 Comprehensive Marketing C&I (Electric)	\$0	\$0	\$0	N/A
24 Community Based Initiatives - C&I (Electric)	\$600	\$0	\$600	Payments can either be made directly to a community or payments can be made to external vendor(s) that are then used to discount approved energy efficiency products for communities participating in the Community Based Initiative.
25 Finance Costs (Electric)	\$5,216,666	\$0	\$5,216,666	Payments made to the Rhode Island Infrastructure Bank are leveraged and lent to municipalities to cover the municipality's cost to bring an energy efficiency project to fruition. Costs may include energy efficiency equipment and related services.
26 OTHER C&I PROGRAMS (Electric)	\$0	\$0	\$0	N/A
27 Subtotal Commercial & Industrial	\$34,557,871	\$2,835,318	\$31,722,553	
28 OER (Electric)	\$0	\$0	\$0	
29 EERMC (Electric)	\$0	\$0	\$0	
30 Subtotal Regulatory	\$0	\$0	\$0	
31 TOTAL All Sectors	\$68,496,690	\$2,835,318	\$65,661,372	
SRP PROGRAMS (Electric)	\$0		\$0	
OTHER COSTS NOT LISTED ABOVE (Electric)	\$323,131		\$323,131	

(1) In the 2020 Energy Efficiency Annual Plan filing, this cost category was referred to as "Rebates and Other Incentives"

Schedule 7 - Sales, Technical Assistance & Training (STAT)

	(a) (b)+(e)+(h)+(k)	(b) (c)+(d)	(c)	(d)	(e) (f)+(g)	(f)	(g)	(h) (i)+(j)	(i)	(j)	(k) (l)+(m)	(l)	(m)
	Total Costs	Total National Grid Labor Costs	National Grid Direct Labor	National Grid Allocated Labor	Total National Grid Employee Expenses	National Grid Direct Employee Expenses	National Grid Allocated Employee Expenses	External Services Costs	Direct External Services Costs	External Services Costs Originating from an Allocation	Other Costs (if any)	Other Direct Costs	Other Costs Originating from an Allocation
1 Residential New Construction (Electric)	\$204,927	\$2,526	\$0	\$2,526	\$515	\$333	\$182	\$201,886	\$198,344	\$3,542	\$0	\$0	\$0
2 ENERGY STAR HVAC (Electric)	\$769,240	\$2,599	\$0	\$2,599	\$520	\$333	\$187	\$766,121	\$762,476	\$3,645	\$0	\$0	\$0
3 EnergyWise (Electric)	\$1,458,457	\$13,229	\$5,646	\$7,584	\$545	\$0	\$545	\$1,444,682	\$1,434,048	\$10,634	\$0	\$0	\$0
4 EnergyWise Multi Family (Electric)	\$219,277	\$3,139	\$0	\$3,139	\$226	\$0	\$226	\$215,912	\$211,511	\$4,402	\$0	\$0	\$0
5 Home Energy Reports (Electric)	\$8,665	\$701	\$623	\$78	\$6	\$0	\$6	\$7,959	\$7,850	\$109	\$0	\$0	\$0
6 ENERGY STAR Lighting (Electric)	\$339,573	\$3,408	\$164	\$3,244	\$233	\$0	\$233	\$335,932	\$331,382	\$4,550	\$0	\$0	\$0
7 Residential Consumer Products (Electric)	\$577,672	\$4,025	\$0	\$4,025	\$293	\$4	\$289	\$573,354	\$567,709	\$5,644	\$0	\$0	\$0
8 Residential ConnectedSolutions (Electric)	\$129,780	\$1,990	\$945	\$1,045	\$216	\$141	\$75	\$127,574	\$126,109	\$1,466	\$0	\$0	\$0
9 Energy Efficiency Education Programs (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10 Residential Pilots (Electric)	\$193,531	\$2,828	\$2,828	\$0	\$0	\$0	\$0	\$190,703	\$190,703	\$0	\$0	\$0	\$0
11 Community Based Initiatives - Residential (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12 Comprehensive Marketing Residential (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13 OTHER RESIDENTIAL PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14 Subtotal Non-Income Eligible Residential	\$3,901,123	\$34,445	\$10,205	\$24,240	\$2,554	\$811	\$1,743	\$3,864,123	\$3,830,132	\$33,992	\$0	\$0	\$0
15 Single Family - Income Eligible Services (Electric)	\$1,043,780	\$16,531	\$0	\$16,531	\$1,189	\$0	\$1,189	\$1,026,060	\$1,002,879	\$23,181	\$0	\$0	\$0
16 Income Eligible Multifamily (Electric)	\$128,412	\$3,129	\$0	\$3,129	\$225	\$0	\$225	\$125,058	\$120,670	\$4,387	\$0	\$0	\$0
17 Subtotal Income Eligible Residential	\$1,172,191	\$19,660	\$0	\$19,660	\$1,414	\$0	\$1,414	\$1,151,117	\$1,123,549	\$27,568	\$0	\$0	\$0
18 Large Commercial New Construction (Electric)	\$1,128,208	\$282,100	\$107,377	\$174,723	\$22,800	\$9,474	\$13,326	\$823,308	\$796,699	\$26,610	\$0	\$0	\$0
19 Large Commercial Retrofit (Electric)	\$4,262,955	\$1,391,083	\$669,368	\$721,715	\$70,517	\$16,442	\$54,074	\$2,801,358	\$2,699,959	\$101,398	-\$3	-\$1	-\$2
20 Small Business Direct Install (Electric)	\$142,936	\$123,095	\$79,991	\$43,104	\$3,454	\$167	\$3,287	\$16,387	\$9,822	\$6,565	\$0	\$0	\$0
21 Commercial ConnectedSolutions (Electric)	\$67,093	\$54,291	\$5,906	\$48,385	\$4,048	\$358	\$3,690	\$8,754	\$1,385	\$7,369	\$0	\$0	\$0
22 Commercial Pilots (Electric)	\$4,627	\$4,627	\$4,627	\$0	\$0	\$0	\$0	\$760	\$0	-\$760	\$0	-\$760	\$0
23 Comprehensive Marketing C&I (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
24 Community Based Initiatives - C&I (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25 Finance Costs (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
26 OTHER C&I PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
27 Subtotal Commercial & Industrial	\$5,605,819	\$1,855,197	\$867,269	\$987,928	\$100,818	\$26,441	\$74,378	\$3,650,567	\$3,508,625	\$141,941	-\$763	-\$761	-\$3
28 OER (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
29 EERMC (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
30 Subtotal Regulatory	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
31 TOTAL All Sectors	\$10,679,133	\$1,909,302	\$877,474	\$1,031,828	\$104,787	\$27,252	\$77,535	\$8,665,808	\$8,462,306	\$203,501	-\$763	-\$761	-\$3
SRP PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
OTHER COSTS NOT LISTED ABOVE (Electric)	\$87	\$87	\$87	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Schedule 8 - Evaluation & Market Research

	(a) (b)+(e)+(h)+(k)	(b) (c)+(d)	(c)	(d)	(e) (f)+(g)	(f)	(g)	(h) (i)+(j)	(i)	(j)	(k) (l)+(m)	(l)	(m)
	Total Costs	Total National Grid Labor Costs	National Grid Direct Labor	National Grid Allocated Labor	Total National Grid Employee Expenses	National Grid Direct Employee Expenses	National Grid Allocated Employee Expenses	External Services Costs	Direct External Services Costs	External Services Costs Originating from an Allocation	Other Costs any	(if Other Direct Costs	Other Costs Originating from an Allocation
1 Residential New Construction (Electric)	\$27,548	\$16,335	\$11,009	\$5,326	\$9	\$4	\$5	\$11,204	\$9,946	\$1,259	\$0	\$0	\$0
2 ENERGY STAR HVAC (Electric)	\$44,778	\$25,399	\$23,094	\$2,305	\$2	\$0	\$2	\$19,377	\$18,832	\$545	\$0	\$0	\$0
3 EnergyWise (Electric)	\$175,412	\$18,084	\$0	\$18,084	\$18	\$0	\$18	\$157,311	\$153,037	\$4,274	\$0	\$0	\$0
4 EnergyWise Multi Family (Electric)	\$170,619	\$21,942	\$10,600	\$10,942	\$14	\$4	\$11	\$149,062	\$146,476	\$2,586	\$0	\$0	\$0
5 Home Energy Reports (Electric)	\$91,849	\$9,860	\$0	\$9,860	\$10	\$0	\$10	\$81,979	\$79,648	\$2,331	\$0	\$0	\$0
6 ENERGY STAR Lighting (Electric)	\$51,100	\$21,356	\$8,241	\$13,115	\$13	\$0	\$13	\$29,731	\$26,632	\$3,100	\$0	\$0	\$0
7 Residential Consumer Products (Electric)	\$551	\$445	\$0	\$445	\$0	\$0	\$0	\$105	\$0	\$105	\$0	\$0	\$0
8 Residential ConnectedSolutions (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9 Energy Efficiency Education Programs (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10 Residential Pilots (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11 Community Based Initiatives - Residential (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12 Comprehensive Marketing Residential (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13 OTHER RESIDENTIAL PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14 Subtotal Non-Income Eligible Residential	\$561,857	\$113,022	\$52,944	\$60,078	\$66	\$8	\$59	\$448,769	\$434,570	\$14,200	\$0	\$0	\$0
15 Single Family - Income Eligible Services (Electric)	\$115,172	\$12,224	\$0	\$12,224	\$12	\$0	\$12	\$102,936	\$100,046	\$2,889	\$0	\$0	\$0
16 Income Eligible Multifamily (Electric)	\$118,150	\$23,537	\$10,696	\$12,841	\$16	\$4	\$13	\$94,597	\$91,562	\$3,035	\$0	\$0	\$0
17 Subtotal Income Eligible Residential	\$233,322	\$35,761	\$10,696	\$25,065	\$28	\$4	\$25	\$197,532	\$191,608	\$5,924	\$0	\$0	\$0
18 Large Commercial New Construction (Electric)	\$185,233	\$22,058	\$311	\$21,747	\$209	\$0	\$209	\$162,966	\$119,745	\$43,221	\$0	\$0	\$0
19 Large Commercial Retrofit (Electric)	\$595,381	\$42,603	\$2,702	\$39,901	\$384	\$0	\$384	\$552,394	\$473,095	\$79,299	\$0	\$0	\$0
20 Small Business Direct Install (Electric)	\$86,698	\$8,570	\$0	\$8,570	\$83	\$0	\$83	\$78,045	\$61,013	\$17,033	\$0	\$0	\$0
21 Commercial ConnectedSolutions (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
22 Commercial Pilots (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
23 Comprehensive Marketing C&I (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
24 Community Based Initiatives - C&I (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25 Finance Costs (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
26 OTHER C&I PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
27 Subtotal Commercial & Industrial	\$867,312	\$73,231	\$3,013	\$70,219	\$676	\$0	\$676	\$793,405	\$653,852	\$139,553	\$0	\$0	\$0
28 OER (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
29 EERMC (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
30 Subtotal Regulatory	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
31 TOTAL All Sectors	\$1,662,491	\$222,014	\$66,652	\$155,361	\$771	\$11	\$759	\$1,439,707	\$1,280,030	\$159,676	\$0	\$0	\$0
SRP PROGRAMS (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
OTHER COSTS NOT LISTED ABOVE (Electric)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Schedule 9 - Shared Cross-Jurisdictional Costs (Non-Labor)

>\$100,000 only for Rhode Island

(Non-Labor Services/Costs that are Shared with Other Jurisdictions and are Allocated to Rhode Island)

	(a)	(b) (c) x (a)	(b) (c) x (a)	(b) (c) x (a)	(c)	(c)	(c)	(d)	(e)	(f)
Description of Service/Cost	Total Cost Used as Basis for Allocation	Total Allocated to Rhode Island	Total Allocated to RI-ELEC	Total Allocated to RI-GAS	% to Rhode Island	% to RI-ELEC	% to RI-GAS	% to Mass.	% to New York	Description of Allocation Methodology
1 IS Vendor. Software work charged to DSM - InDemand Support & Releases	\$2,154,742	\$390,008	\$282,271	\$107,737	18%	13%	5%	64%	18%	Based on Overall Jurisdictional 2020 EE Budgets - ALL RI; ALL UPSTATE NY; ALL MA; ALL DOWNSTATE NY

Schedule 10 - Methods for Allocating Costs >\$500,000 Across Rhode Island Programs/Sectors

	(a)	(b)	(c)	(d)	(f)
Description of Cost Allocated	Total Cost Allocated	Allocation to Non-Eligible Residential Programs	Allocation to Eligible Residential Programs	Allocation to C&I Programs	Description of Allocation Methodology
1 IS Vendor Costs for InDemand Releases - RI-ELEC	\$339,311	\$140,626	\$51,649	\$147,036	Based on PP&A Budgets of Programs Designated To Receive Allocations
2					
3					
4					
5 Labor Allocated to PP&A	\$1,241,340	\$485,058	\$178,152	\$578,130	Based on PP&A Budgets of Programs Designated To Receive Allocations
6 Labor Allocated to Marketing	\$22,533	\$6,180	\$434	\$15,919	Based on Marketing Budgets of Programs Designated To Receive Allocations
7 Labor Allocated to STAT	\$1,031,303	\$24,106	\$19,551	\$987,645	Based on STAT Budgets of Programs Designated To Receive Allocations
8 Labor Allocated to Evaluation & Market Research	\$155,361	\$60,078	\$25,065	\$70,219	Based on Evaluation & Marketing Research Budgets of Programs Designated To Receive Allocations
9 ALLOCATED LABOR - RI-ELEC TOTAL	\$2,450,536	\$575,422	\$223,201	\$1,651,913	

Attachment 2

Gas Summary Table of Year-End Results

NATIONAL GRID ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND
Table G-1: Summary of 2020 Target and Year End Results

Sector and Program	(1) (2) (3)			(4) (5) (6)			(7) (8) (9)			(10) (11) (12)			(13) (14)		(15)
	Energy Savings (MMBtu)			Customer Participation			Implementation Expenses (\$ 000)			Energy Savings (Lifetime MMBtu)			\$/Lifetime MMBtu		Peak Hour Gas Demand Savings (MMBtu)
	Approved Target	Actual	Pct Achieved	Approved Target	Actual	Pct Achieved	Approved Budget	Actual	Pct Achieved	Planned	Actual	Pct Achieved	Planned	Actual	Year to Date
Commercial & Industrial															
Large Commercial New Construction	45,474	54,948	120.8%	83	49	59.6%	\$ 2,652.6	\$ 2,726.0	102.8%	776,748	806,280	103.8%	\$ 3.41	\$ 3.38	27.47
Large Commercial Retrofit	163,011	86,451	53.0%	88	78	89.2%	\$ 4,889.1	\$ 3,030.7	62.0%	1,689,045	666,468	39.5%	\$ 2.89	\$ 4.55	43.23
Small Business Direct Install	2,523	3,513	139.2%	59	78	132.8%	\$ 125.0	\$ 134.1	107.3%	17,662	31,231	176.8%	\$ 7.08	\$ 4.29	1.76
Commercial & Industrial Multifamily	11,155	1,564	14.0%	729	44	6.0%	\$ 967.9	\$ 333.5	34.5%	155,596	25,315	16.3%	\$ 6.22	\$ 13.17	0.78
Commercial Pilots							\$ 366.0	\$ 96.9	26.5%						
Finance Costs							\$ 500.0	\$ 500.0	100.0%						
Community Based Initiatives - C&I							\$ 22.0	\$ -	0.0%						
SUBTOTAL	222,164	146,476	65.9%	958	250	26.1%	\$ 9,522.7	\$ 6,821.1	71.6%	2,639,051	1,529,294	57.9%	\$ 3.61	\$ 4.46	73.24
Income Eligible Residential															
Single Family - Income Eligible Services	10,096	3,142	31.1%	861	279	32.4%	\$ 5,952.3	\$ 2,221.9	37.3%	201,916	62,840	31.1%	\$ 29.48	\$ 35.36	1.57
Income Eligible Multifamily	24,413	10,091	41.3%	3,500	1,716	49.0%	\$ 3,009.5	\$ 1,806.8	60.0%	447,962	161,411	36.0%	\$ 6.72	\$ 11.19	5.05
SUBTOTAL	34,508	13,233	38.3%	4,361	1,995	45.7%	\$ 8,961.8	\$ 4,028.7	45.0%	649,878	224,251	34.5%	\$ 13.79	\$ 17.97	6.62
Non-Income Eligible Residential															
Energy Star® HVAC	29,994	23,974	79.9%	3,677	2,685	73.0%	\$ 2,693.1	\$ 2,521.1	93.6%	495,828	402,374	81.2%	\$ 5.43	\$ 6.27	11.99
EnergyWise	25,621	23,612	92.2%	2,050	3,311	161.5%	\$ 8,117.6	\$ 8,924.6	109.9%	608,029	556,506	91.5%	\$ 13.35	\$ 16.04	11.81
EnergyWise Multifamily	14,561	5,314	36.5%	4,360	308	7.1%	\$ 1,512.1	\$ 659.7	43.6%	225,079	88,925	39.5%	\$ 6.72	\$ 7.42	2.66
Home Energy Reports	115,426	103,159	89.4%	152,324	155,730	102.2%	\$ 471.5	\$ 366.5	77.7%	115,426	103,159	89.4%	\$ 4.08	\$ 3.55	51.58
Residential New Construction	4,346	3,077	70.8%	300	131	43.7%	\$ 620.5	\$ 436.6	70.4%	82,971	55,611	67.0%	\$ 7.48	\$ 7.85	1.54
Comprehensive Marketing - Residential							\$ 79.9	\$ 83.4	104.4%						
Community Based Initiatives - Residential							\$ 68.9	\$ 34.4	49.9%						
SUBTOTAL	189,948	159,135	83.8%	162,711	162,165	99.7%	\$ 13,563.6	\$ 13,026.3	96.0%	1,527,333	1,206,576	79.0%	\$ 8.88	\$ 10.80	79.57
Regulatory															
EERMC							\$ 361.2	\$ 360.6	99.8%						
OER							\$ 361.2	\$ 361.2	100.0%						
SUBTOTAL							\$ 722.4	\$ 721.8	99.9%						
TOTAL	446,621	318,845	71.4%	168,030	164,410	97.8%	\$ 32,770.4	\$ 24,597.9	75.1%	4,816,261	2,960,120	61.5%	\$ 6.80	\$ 8.31	159.42

NOTES

- (1)(4) Targets from Docket 4979 - Attachment 6, Table G-7 (gas).
- (3) Pct Achieved is Column (2)/ Column (1).
- (4) Participation was planned and is reported in 'net' terms which takes into account free-ridership and spillover.
- (6) Pct Achieved is Column (5)/ Column (4).
- (9) Pct Achieved is Column (8)/ Column (7).
- (13) Planned \$/lifetime MMBtu from Docket 4979 - Attachment 6, Table G-5 (gas), Refined December 4, 2019 - adjusted to reflect format of quarterly and year end report. Program Implementation Expenses/lifetime MMBtu.
- (12) Pct Achieved is Column (11) / Column (10)
- (14) Actual \$/lifetime MMBtu = Column (8)*1000/Column (11)
- (15) Peak Hour Gas Demand Savings is a test metric in 2020 and represents a rough approximation of peak-hour gas demand impacts. Column(2) *0.01 *0.05

NATIONAL GRID NATURAL GAS ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND
Table G-2: Summary of Value and MMBTU Saved by Program
2020 Program Year

	Value (\$000)					MMBTU Gas Saved	
	(1) Total Value	(2) Natural Gas Benefits	(3) Non-Gas Benefits	Economic Benefits	NOx Benefits	(5) Annual	(6) Lifetime
Commercial & Industrial							
Large Commercial New Construction	\$24,188	\$10,241	\$9,533	\$3,871	\$543	54,948	806,280
Large Commercial Retrofit	\$21,595	\$8,702	\$4,776	\$7,668	\$449	86,451	666,468
Commercial & Industrial Multifamily	\$1,007	\$330	\$30	\$630	\$17	1,564	25,315
Small Business Direct Install	\$1,012	\$392	\$364	\$235	\$21	3,513	31,231
SUBTOTAL	\$47,802	\$19,666	\$14,703	\$12,403	\$1,030	146,476	1,529,294
Income Eligible Residential							
Single Family - Income Eligible Services	\$5,675	\$873	\$2,562	\$2,200	\$39	3,142	62,840
Income Eligible Multifamily	\$6,160	\$2,269	\$989	\$2,801	\$101	10,091	161,411
SUBTOTAL	\$11,835	\$3,142	\$3,551	\$5,000	\$141	13,233	224,251
Non-Income Eligible Residential							
Energy Star® HVAC	\$8,547	\$5,579	\$624	\$2,092	\$253	23,974	402,374
EnergyWise	\$20,573	\$7,625	\$3,585	\$9,014	\$349	23,612	556,506
EnergyWise Multifamily	\$5,066	\$1,221	\$2,714	\$1,075	\$56	5,314	88,925
Home Energy Reports	\$1,925	\$1,472	\$0	\$388	\$65	103,159	103,159
Residential New Construction	\$969	\$771	\$67	\$96	\$35	3,077	55,611
SUBTOTAL	\$37,080	\$16,667	\$6,990	\$12,666	\$757	159,135	1,206,576
TOTAL	\$96,717	\$39,475	\$25,244	\$30,070	\$1,928	318,845	2,960,120

Notes:

- (1) Total Benefits equal Natural Gas Benefits plus Non-Gas Benefits plus Economic Benefits plus NOx Benefits. Carbon value is embedded in Natural Gas Benefits.
- (3) Non-Gas Benefits include electric benefits and non-resource benefits (excluding Economic and NOx benefits listed separately)

NATIONAL GRID NATURAL GAS ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND
Table G-3: Summary of B/C Ratios, Value and Costs (\$000's)
2020 Program Year

	(1)	(2)	(3)	(4)	(5)
	Benefit/ Cost	Total Value	Program Implementation Expenses	Customer Contribution	Shareholder Incentive
Commercial & Industrial					
Large Commercial New Construction	7.68	\$24,188.2	\$2,726.0	\$424.3	
Large Commercial Retrofit	5.72	\$21,595.1	\$3,030.7	\$747.0	
Small Business Direct Install	6.45	\$1,011.6	\$134.1	\$22.7	
Commercial & Industrial Multifamily	2.64	\$1,007.1	\$333.5	\$48.5	
Commercial Pilots			\$96.9		
Finance Costs			\$500.0		
Community Based Initiatives - C&I			\$0.0		
SUBTOTAL	5.93	\$47,802.1	\$6,821.1	\$1,242.6	\$0.0
Income Eligible Residential					
Single Family - Income Eligible Services	2.55	\$5,674.7	\$2,221.9	\$0.0	
Income Eligible Multifamily	2.06	\$6,160.0	\$1,806.8	\$1,179.2	
SUBTOTAL	2.27	\$11,834.7	\$4,028.7	\$1,179.2	\$0.0
Non-Income Eligible Residential					
Energy Star® HVAC	1.54	\$8,547.2	\$2,521.1	\$3,025.2	
EnergyWise	2.16	\$20,572.9	\$8,924.6	\$607.1	
EnergyWise Multifamily	7.04	\$5,065.7	\$659.7	\$59.8	
Home Energy Reports	5.25	\$1,925.3	\$366.5	\$0.0	
Residential New Construction	1.30	\$968.8	\$436.6	\$307.3	
Community Based Initiatives - Residential			\$34.4		
Comprehensive Marketing - Residential			\$83.4		
SUBTOTAL	2.13	\$37,079.8	\$13,026.3	\$3,999.3	\$347.7
Regulatory					
EERMC			\$360.6		
OER			\$361.2		
SUBTOTAL			\$721.8		
TOTAL	3.08	\$96,716.6	\$24,597.9	\$6,421.2	\$347.7

Notes:

(1) RI Test B/C Ratio = (Natural Gas Benefits + Non-Gas Benefits + Economic Benefits + Carbon Benefits + NOx Benefits) / (Program Implementation + Customer Contribution + Shareholder Incentive)

(2) Year-End Value Total from Table G-2.

(3) Year-End Implementation Expenses by Program from Table G-1.

(4) For the Income Eligible Multifamily program, there are some circumstances where a customer co-pay is charged. If the facility is owned by a for-profit company and there are custom measures being installed that cannot be supported by the program budget a co-pay will be negotiated with the customer.

NATIONAL GRID NATURAL GAS ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND
Table G-4: National Grid 2020 EE Incentive Calculation

Incentive Rate: 5.00%

	(1)	(2)	(3)	(3a)	(3b)	(3c)	(4)
Sector	Approved Spending Budget	Target Incentive	Annual Savings Goal (MMBTU)	Actual Spending	% of Approved Spending	Budget Adjusted target MMBtu Savings	Threshold MMBtu Savings
Income Eligible Residential	\$ 8,961,819	\$ 448,091	34,508	\$ 4,028,687	45.0%	34,508	25,881
Non-Income Eligible Residential	\$ 13,553,556	\$ 677,678	189,948	\$ 13,026,344	96.1%	189,948	142,461
Commercial & Industrial	\$ 9,056,639	\$ 452,832	222,164	\$ 6,724,214	74.2%	222,164	166,623
Total	\$ 31,572,015	\$ 1,578,601	446,621	\$ 23,779,245	75.3%	446,621	334,965

Sector	(5) Actual MMBtu	(6) % of Target Savings	(7) Savings Eligible for Incentive	(8) Earned Savings Incentive	(9) % of Target Incentive Achieved
Income Eligible Residential	13,233	38.3%	-	\$0	0.0%
Non-Income Eligible Residential	159,135	83.8%	159,135	\$347,732	51.3%
Commercial & Industrial	146,476	65.9%	-	\$0	0.0%
Total	318,845	71.4%	159,135	\$347,732	22.0%

Notes:

- (1) Budget from 2020 EEPP. Includes Implementation; excludes Regulatory Costs, Residential and Commercial Pilots, Assessments, and Shareholder Incentive.
- (2) Equal to the incentive rate (5.0%) x Column (1).
- (3) Approved savings goal from 2020 EEPP
- (3a) Actual spending includes actual Implementation Expenses from Table G-1. It excludes Regulatory Costs, Residential and Commercial Pilots, Assessments, and Shareholder Incentive.
- (3b) Column (3a)/ Column (1)
- (3c) Column (3) * (3b), accounting for budget rules that adjust target savings depending on achieved savings and budgets to goal (3)
- (4) 75% of Target MMBtu Savings
- (5) Year End Savings from Table G-1
- (6) Column (5)/ Column (3c)
- (7) If Column (6) is less than 75%, Column (8) = 0,
 If Column (6) is between 75% and 125%, Column (7) = Column 5;
 If Column (6) is greater than 125%, Column (7) = 125% of Column (3c) due to the incentive cap.
- (8) The shareholder incentive will be calculated as follow, where SB is the Spending Budget in the sector:
 From 75% of savings to 100% of savings: Shareholder Incentive = SB x (0.15 x % of savings achieved – 0.10)
 From 100% of savings to 125% of savings: Shareholder Incentive = SB x (0.05 x % of savings achieved)
- (9) Column (9) / Column (2)
- (10) For the 2020 Year End Report, a correction was made for the Energywise Single Family program that also impact 2019 energy savings. Some energy savings that should have been recorded as negative savings were instead recorded as positive energy savings. The result of this correction decreased the 2019 year-end energy savings for the the Energywise Single Family program by 44.3 net annual MMBtu. This correction decreases the 2019 shareholder incentive by \$157 for energy savings. The Company believes that this amount should be refunded to customers and has therefore reduced the 2020 earned shareholder incentive by \$157 for energy savings.

National Grid: RIG

TABLE G-5

OVERALL ANALYSIS OF ENERGY EFFICIENCY FUND BALANCE

	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	TOTAL
1. Start Of Peri	(\$373,202)	\$3,662,875	\$7,375,265	\$8,581,432	\$10,328,735	\$11,368,071	(\$373,202)
2. Revenue	\$4,430,920	\$5,024,199	\$3,740,801	\$3,239,682	\$1,858,971	\$1,101,714	\$19,396,287
3. Monthly EE	\$398,607	\$1,324,443	\$2,546,460	\$1,502,223	\$830,930	\$1,133,668	\$7,736,331
4. Cash Flow C	\$4,032,312	\$3,699,756	\$1,194,341	\$1,737,459	\$1,028,042	(\$31,955)	\$11,659,956
5. End Of Peri	\$3,659,110	\$7,362,631	\$8,569,606	\$10,318,891	\$11,356,777	\$11,336,116	\$11,286,754
6. Interest	\$3,765	\$12,633	\$11,826	\$9,844	\$11,295	\$11,825	\$61,188
7. End Of Peri	\$3,662,875	\$7,375,265	\$8,581,432	\$10,328,735	\$11,368,071	\$11,347,941	\$11,347,941
							YEAR END
							TOTAL
8. Start Of Peri	\$11,347,941	\$10,774,088	\$10,187,554	\$9,901,485	\$8,526,927	\$8,911,200	(\$373,202)
9. Revenue	\$819,433	\$1,225,528	\$972,212	\$1,586,032	\$2,906,096	\$4,516,680	\$31,422,268
10. Monthly EE	\$1,404,803	\$1,822,974	\$1,268,738	\$2,970,182	\$2,530,901	\$6,364,002	\$24,097,931
11. Cash Flow C	(\$585,370)	(\$597,446)	(\$296,526)	(\$1,384,151)	\$375,195	(\$1,847,323)	\$7,324,336
12. End Of Peri	\$10,762,572	\$10,176,642	\$9,891,027	\$8,517,334	\$8,902,123	\$7,063,878	\$6,951,134
13. Interest	\$11,516	\$10,912	\$10,458	\$9,593	\$9,078	\$8,320	\$121,064
14. End Of Peri	\$10,774,088	\$10,187,554	\$9,901,485	\$8,526,927	\$8,911,200	\$7,072,198	\$7,072,198
15. 2020 Incentive							\$347,732
16. Ending Balance after Incentive							\$6,724,466
17. Income Eligible Subsidization							\$0
18. Ending Balance after Subsidization							\$6,724,466

- 1. Previous year's ending balan
- 2. Business Objects queries for
- 3. SAP queries for expenses
- 4. Line 2 minus Line 3
- 5. Line 1 plus Line 4
- 6. Interest applied
- 7. Line 5 plus Line 6
- 8. Previous month's ending balance
- 9. Business Objects queries for revenues
- 10. SAP queries for expenses
- 11. Line 9 minus Line 10
- 12. Line 8 plus Line 11
- 13. Interest applied
- 14. Line 12 plus Line 13
- 15. Estimated 2020 Incentive plus prior period true-ups

NATIONAL GRID GAS ENERGY EFFICIENCY PROGRAMS IN RHODE ISLAND
Table G-6: National Grid 2020 Revolving Loan Funds

Large C&I Gas Revolving Loan Fund			Rhode Island Public Energy Partnership (RI PEP) Gas		
<u>Income Statement</u>			<u>Income Statement</u>		
(1)	2020 Funds Available	\$804,205	(1)	2020 Funds Available	\$2,066
(2)	2020 Loan budget	\$1,100,000	(4)	Paid	\$0
(3)	Committed	\$435,868	(4a)	Funds Returned to OER	\$0
(4)	Paid	\$464,438	(5)	Repayments	\$1,514
(5)	Repayments	\$1,192,346	(6)	Available 12/31/20	\$3,580
(6)	Available 12/31/20	\$1,096,245	(7)	Outstanding loan volume	\$0
(7)	Outstanding loan volume	\$1,470,569	(8)	Loan defaults during period (\$)	\$0
(8)	Loan defaults during period (\$)	\$0	(9)	Arrears over 120 days at period end (\$)	\$0
(9)	Arrears over 120 days at period end (\$)	\$4,386			
 <u>Program Impact</u>			 <u>Program Impact</u>		
(10)	Number of loans	25	(10)	Number of loans	
(10b)	Participants	20	(10b)	Participants	0
(11)	Annual Savings (Gross MMBtu)	18,173	(11)	Savings (MMBtu)	0
(12)	Annual Savings (Net MMBtu)	14,845			
(13)	Lifetime Savings (Gross MMBtu)	181,001			
(14)	Lifetime Savings (Net MMBtu)	148,556			
(17)	Total associated incentive volume (\$)	\$264,626			
(18)	Total annual estimated energy cost savings (\$)	\$304,386			

Notes

- 1 Amount available as of January 1, 2020.
- 2 Budget adopted by Sales Team for 2020 operations. Budget includes projections of repayments made during 2020.
- 3 As of December 31, 2020. Committed in 2020 but to be paid in 2020. Savings not included in 2020.
- 4 As of December 31, 2020. This includes all project paid in 2020 and the OBR associated with those projects. OBR payment are processed once the associated incentive has been paid usually in batches.
- 5 As of December 31, 2020
- 6 Fund balance as of December 31, 2020. Committed funds are subtracted from this amount.
- 7 Total outstanding loan balance. Loans lent out that still need to be paid back. This includes loans from previous years.
- 8 Total loan value in default during period.
- 9 Total loan value in arrears for over 120 days as of December 31, 2020.
- 10 As of December 31, 2020
- 10b Unique customer names for large business (one customer name can have multiple sub accounts as is in the case of a franchise).
- 11 As of December 31, 2020
- 12 As of December 31, 2020
- 13 As of December 31, 2020
- 14 As of December 31, 2020
- 15 As of December 31, 2020
- 16 As of December 31, 2020
- 17 Incentives paid out with loans.
- 18 Estimated energy cost savings to loan fund participants.

Attachment 2a
Gas Costs Schedules

Schedule 1 - Program and Sector Cost Summary
DIRECT vs ALLOCATED

	(a)		(b)		(c)		(d)	
	TOTALS							
	TOTAL SPLIT 1		TOTAL SPLIT 2		DIRECT vs ALLOCATED		Cost of services and product rebates/incentives provided to customers vs. Other Costs	
	DIRECT vs ALLOCATED		Cost of services and product rebates/incentives provided to customers		Other Costs			
	Total Costs	DIRECT	ALLOCATED					
1 Residential New Construction (Gas)	\$436,630	\$412,279	\$24,351	\$225,443	\$211,188			
2 ENERGY STAR HVAC (Gas)	\$2,521,061	\$2,453,662	\$67,399	\$2,076,979	\$444,082			
3 EnergyWise (Gas)	\$8,924,500	\$8,735,147	\$189,443	\$7,486,302	\$1,438,288			
4 EnergyWise Multi Family (Gas)	\$659,742	\$614,686	\$45,057	\$443,428	\$216,315			
5 Home Energy Reports (Gas)	\$366,484	\$351,050	\$15,435	\$334,183	\$32,302			
6 ENERGY STAR Lighting (Gas)	\$0	\$0	\$0	\$0	\$0			
7 Residential Consumer Products (Gas)	\$0	\$0	\$0	\$0	\$0			
8 Residential Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0			
9 Energy Efficiency Education Programs (Gas)	\$0	\$0	\$0	\$0	\$0			
10 Residential Pilots (Gas)	\$0	\$0	\$0	\$0	\$0			
11 Community Based Initiatives - Residential (Gas)	\$34,405	\$34,405	\$0	\$700	\$33,705			
12 Comprehensive Marketing Residential (Gas)	\$83,421	\$82,232	\$1,189	\$0	\$83,421			
13 OTHER RESIDENTIAL PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0			
14 Subtotal Non-Income Eligible Residential	\$13,026,344	\$12,683,460	\$342,884	\$10,567,034	\$2,459,311			
15 Single Family - Income Eligible Services (gas)	\$2,221,854	\$2,093,700	\$128,094	\$1,600,338	\$621,516			
16 Income Eligible Multifamily (Gas)	\$1,806,833	\$1,728,976	\$77,857	\$1,442,159	\$364,673			
17 Subtotal Income Eligible Residential	\$4,028,687	\$3,822,736	\$205,951	\$3,042,498	\$986,189			
18 Large Commercial New Construction (Gas)	\$2,725,959	\$2,477,423	\$248,535	\$1,309,828	\$1,416,131			
19 Large Commercial Retrofit (Gas)	\$3,030,681	\$2,625,789	\$404,892	\$849,623	\$2,181,056			
20 Small Business Direct Install (Gas)	\$134,114	\$125,056	\$9,048	\$70,116	\$63,998			
21 Commercial Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0			
22 Commercial Pilots (Gas)	\$96,925	\$96,925	\$0	\$94,950	\$1,975			
23 Comprehensive Marketing C&I (Gas)	\$0	\$0	\$0	\$0	\$0			
24 Community Based Initiatives - C&I (Gas)	\$0	\$0	\$0	\$0	\$0			
25 Commercial & Industrial Multifamily (Gas)	\$333,460	\$278,455	\$55,005	\$198,061	\$135,399			
26 Finance Costs (Gas)	\$0	\$0	\$0	\$0	\$0			
27 OTHER C&I PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0			
28 Subtotal Commercial & Industrial	\$6,321,139	\$5,603,658	\$717,480	\$2,522,580	\$3,798,559			
29 OER (Gas)	\$361,208	\$361,208	\$0	\$0	\$361,208			
30 EERRMC (Gas)	\$360,554	\$360,554	\$0	\$0	\$360,554			
31 Subtotal Regulatory	\$721,762	\$721,762	\$0	\$0	\$721,762			
32 TOTAL All Sectors	\$24,097,931	\$22,831,617	\$1,266,315	\$16,132,111	\$7,965,821			
OTHER COSTS NOT LISTED ABOVE (Gas)	\$0	\$0	\$0	\$0	\$0			

	(e)		(f)		(g)		(h)		(i)		(j)		(k)		(l)		(m)		(n)		(o)		(p)	
	DIRECT COSTS												ALLOCATED COSTS											
	NO INCENTIVE						Cost of services and product rebates/incentives provided to customers						Other Costs				Cost of services and product rebates/incentives provided to customers							
National Grid Direct Labor & Employee Expense	Direct External		Direct "Not Labor, Expense, External"		National Grid Direct Labor & Employee Expense		Direct External		Direct "Not Labor, Expense, External"		National Grid Allocated Labor & Employee Expense		Allocated External		Allocated "Not Labor, Expense, External"		National Grid Allocated Labor & Employee Expense		Allocated External		Allocated "Not Labor, Expense, Vendor"			
\$18,799	\$168,038	\$0	\$0	\$225,443	\$0	\$12,779	\$11,572	\$0	\$0	\$0	\$0	\$36,351	\$31,048	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$41,763	\$334,920	\$0	\$0	\$2,076,979	\$0	\$36,351	\$31,048	\$0	\$0	\$0	\$0	\$99,265	\$90,177	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$21,381	\$1,227,464	\$0	\$0	\$7,486,302	\$0	\$23,656	\$21,401	\$0	\$0	\$0	\$0	\$7,996	\$7,439	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$23,694	\$147,564	\$0	\$0	\$443,428	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$3,496	\$13,371	\$0	\$0	\$334,183	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$1,905	\$31,801	\$0	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$2,201	\$80,031	\$0	\$0	\$0	\$0	\$1,139	\$60	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$113,239	\$2,003,188	\$0	\$0	\$10,567,034	\$0	\$181,186	\$161,698	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$14,362	\$479,060	\$0	\$0	\$1,600,338	\$0	\$67,427	\$60,667	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$10,867	\$275,950	\$0	\$0	\$1,442,159	\$0	\$40,463	\$37,293	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$25,229	\$755,009	\$0	\$0	\$3,042,498	\$0	\$107,890	\$98,061	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$172,323	\$995,273	\$0	\$0	\$1,309,828	\$0	\$117,293	\$131,242	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$445,310	\$1,330,854	\$0	\$0	\$849,623	\$0	\$210,585	\$194,306	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$3,132	\$23,639	\$0	\$0	\$70,116	\$0	\$5,239	\$3,809	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$1,975	\$0	\$0	\$0	\$94,950	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$9,417	\$70,977	\$0	\$0	\$198,061	\$0	\$27,257	\$27,748	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$660,336	\$2,420,743	\$0	\$0	\$2,522,580	\$0	\$360,375	\$357,105	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$361,208	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$360,554	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$721,762	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$798,804	\$5,900,702	\$0	\$0	\$16,132,111	\$0	\$649,451	\$616,864	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
OTHER COSTS NOT LISTED ABOVE (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

1 In the 2020 Energy Efficiency Annual Plan filing, this cost category was referred to as "Rebates and Other Incentives"
2 These Costs do not include costs relating to the cost of services and product rebates/incentives provided to customers
3 Gas Finance Costs are not included in these schedules but are included in Attachment 2, Table 1 of 2020 Year End Report

Schedule 1a - Program and Sector Cost Summary

By Report Category

		(d) (Schedule 4) col a	(e) (Schedule 5) col a	(f) (Schedule 6) col a	(g) (Schedule 7) col a	(h) (Schedule 8) col a	
	Total Costs	Program Planning & Admin.	Marketing	Cost of services and product rebates/incentives provided to customers (1)	STAT	Evaluation & Research	
1	Residential New Construction (Gas)	\$436,630	\$35,633	\$49	\$225,443	\$161,019	\$14,486
2	ENERGY STAR HVAC (Gas)	\$2,521,061	\$84,179	\$192,411	\$2,076,979	\$155,024	\$12,469
3	EnergyWise (Gas)	\$8,924,590	\$157,972	\$79,200	\$7,486,302	\$1,109,475	\$91,641
4	EnergyWise Multi Family (Gas)	\$659,742	\$47,555	\$35,293	\$443,428	\$90,520	\$42,947
5	Home Energy Reports (Gas)	\$366,484	\$15,263	\$18	\$334,183	\$1,123	\$15,898
6	ENERGY STAR Lighting (Gas)	\$0	\$0	\$0	\$0	\$0	\$0
7	Residential Consumer Products (Gas)	\$0	\$0	\$0	\$0	\$0	\$0
8	Residential Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0	\$0
9	Energy Efficiency Education Programs (Gas)	\$0	\$0	\$0	\$0	\$0	\$0
10	Residential Pilots (Gas)	\$0	\$0	\$0	\$0	\$0	\$0
11	Community Based Initiatives - Residential (Gas)	\$34,405	\$1,905	\$31,801	\$700	\$0	\$0
12	Comprehensive Marketing Residential (Gas)	\$83,431	\$125	\$83,305	\$0	\$0	\$1
13	OTHER RESIDENTIAL PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0	\$0
14	Subtotal Non-Income Eligible Residential	\$13,026,344	\$342,632	\$422,076	\$10,567,034	\$1,517,161	\$177,442
15	Single Family - Income Eligible Services (gas)	\$2,221,854	\$112,598	\$35,557	\$1,600,338	\$462,052	\$11,309
16	Income Eligible Multifamily (Gas)	\$1,806,833	\$64,795	\$3,580	\$1,442,159	\$204,370	\$91,928
17	Subtotal Income Eligible Residential	\$4,028,687	\$177,393	\$39,137	\$3,042,498	\$666,422	\$103,238
18	Large Commercial New Construction (Gas)	\$2,725,959	\$87,637	\$160,078	\$1,309,828	\$986,651	\$181,765
19	Large Commercial Retrofit (Gas)	\$3,030,681	\$352,451	\$247,661	\$849,625	\$1,331,165	\$249,779
20	Small Business Direct Install (Gas)	\$134,114	\$3,964	\$31,170	\$70,116	\$27,345	\$1,519
21	Commercial ConnectedSolutions (Gas)	\$0	\$0	\$0	\$0	\$0	\$0
22	Commercial Pilots (Gas)	\$96,925	\$0	\$0	\$94,950	\$1,975	\$0
23	Comprehensive Marketing C&I (Gas)	\$0	\$0	\$0	\$0	\$0	\$0
24	Community Based Initiatives - C&I (Gas)	\$0	\$0	\$0	\$0	\$0	\$0
25	Commercial & Industrial Multifamily (Gas)	\$333,460	\$30,353	\$14,464	\$198,061	\$50,246	\$40,336
26	Finance Costs (Gas)	\$0	\$0	\$0	\$0	\$0	\$0
27	OTHER C&I PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0	\$0
28	Subtotal Commercial & Industrial	\$6,321,139	\$474,405	\$453,373	\$2,522,580	\$2,397,382	\$473,399
29	OER (Gas)	\$361,208	\$361,208	\$0	\$0	\$0	\$0
30	EERMC (Gas)	\$360,554	\$360,554	\$0	\$0	\$0	\$0
31	Subtotal Regulatory	\$721,762	\$721,762	\$0	\$0	\$0	\$0
32	TOTAL All Sectors	\$24,097,931	\$1,716,192	\$914,587	\$16,132,111	\$4,580,964	\$754,078
	OTHER COSTS NOT LISTED ABOVE (Gas)	\$0	\$0	\$0	\$0	\$0	\$0

Schedule 2 - Labor and Employee Expenses

	(a) (b)+(c)	(b) (e)+(h)	(c) (f)+(i)	(d) (e)+(f)	(e)	(f)	(g) (h)+(i)	(h)	(i)
	Total National Grid Labor + Expenses	National Grid Direct Labor + Expenses	National Grid Allocated Labor + Expenses	Total National Grid Labor	National Grid Direct Labor	National Grid Allocated Labor	Total National Grid Employee Expenses	National Grid Direct Employee Expenses	National Grid Allocated Employee Expenses
1 Residential New Construction (Gas)	\$31,578	\$18,799	\$12,779	\$31,253	\$18,670	\$12,583	\$325	\$129	\$196
2 ENERGY STAR HVAC (Gas)	\$78,114	\$41,763	\$36,351	\$77,238	\$41,449	\$35,789	\$876	\$314	\$561
3 EnergyWise (Gas)	\$120,646	\$21,381	\$99,265	\$119,263	\$21,368	\$97,895	\$1,383	\$13	\$1,370
4 EnergyWise Multi Family (Gas)	\$47,350	\$23,694	\$23,656	\$46,992	\$23,668	\$23,324	\$358	\$26	\$332
5 Home Energy Reports (Gas)	\$11,491	\$3,496	\$7,996	\$11,380	\$3,496	\$7,884	\$112	\$0	\$112
6 ENERGY STAR Lighting (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7 Residential Consumer Products (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8 Residential Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9 Energy Efficiency Education Programs (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10 Residential Pilots (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11 Community Based Initiatives - Residential (Gas)	\$1,905	\$1,905	\$0	\$1,905	\$1,905	\$0	\$0	\$0	\$0
12 Comprehensive Marketing Residential (Gas)	\$3,341	\$2,201	\$1,139	\$3,292	\$2,177	\$1,115	\$49	\$24	\$24
13 OTHER RESIDENTIAL PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14 Subtotal Non-Income Eligible Residential	\$294,425	\$113,239	\$181,186	\$291,322	\$112,732	\$178,590	\$3,102	\$506	\$2,596
15 Single Family - Income Eligible Services (gas)	\$81,789	\$14,362	\$67,427	\$80,778	\$14,289	\$66,489	\$1,011	\$73	\$938
16 Income Eligible Multifamily (Gas)	\$51,330	\$10,867	\$40,463	\$50,776	\$10,841	\$39,934	\$554	\$26	\$529
17 Subtotal Income Eligible Residential	\$133,119	\$25,229	\$107,890	\$131,554	\$25,131	\$106,423	\$1,565	\$98	\$1,467
18 Large Commercial New Construction (Gas)	\$289,616	\$172,323	\$117,293	\$280,571	\$165,595	\$114,976	\$9,045	\$6,728	\$2,318
19 Large Commercial Retrofit (Gas)	\$655,896	\$445,310	\$210,585	\$631,930	\$425,230	\$206,701	\$23,965	\$20,080	\$3,885
20 Small Business Direct Install (Gas)	\$36,551	\$31,312	\$5,239	\$36,454	\$31,312	\$5,142	\$97	\$0	\$97
21 Commercial Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
22 Commercial Pilots (Gas)	\$1,975	\$1,975	\$0	\$1,975	\$1,975	\$0	\$0	\$0	\$0
23 Comprehensive Marketing C&I (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
24 Community Based Initiatives - C&I (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25 Commercial & Industrial Multifamily (Gas)	\$36,674	\$9,417	\$27,257	\$36,187	\$9,392	\$26,795	\$487	\$25	\$462
26 Finance Costs (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
27 OTHER C&I PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
28 Subtotal Commercial & Industrial	\$1,020,711	\$660,336	\$360,375	\$987,117	\$633,503	\$353,613	\$33,594	\$26,833	\$6,761
29 OER (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
30 EERMC (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
31 Subtotal Regulatory	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
32 TOTAL All Sectors	\$1,448,255	\$798,804	\$649,451	\$1,409,993	\$771,366	\$638,626	\$38,262	\$27,437	\$10,825
OTHER COSTS NOT LISTED ABOVE (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Schedule 3 - Expenses Categorized as Vendor Costs in Company's Systems¹

	(a)	(b)	(c) (a) - (b)	(d)	(e)	(f) (d) + (e)	(g) (c) + (f)
	Total Costs of Services, Products, and Rebates Provided to Customers.2 (also referred to as "Rebates and Other Customer Incentives")	Rebate Payments Made Directly to Customers by National Grid and Rebates Paid to PEX's to Whom Customer Rebates were Assigned	Payments to Service Vendors for Costs Relating to Services, Products, and Processing Rebates (excluding costs included in col. b)3	Direct "External Costs"4 from Vendor Services	"External Costs" from Vendors Originating from an Allocation	Total of Vendor Costs Categorized as "External Costs" from Service Vendors (excluding costs included in columns a, b & c)	Total Costs from Service Vendors, Excluding Rebate Payments Made Directly to Customers by National Grid
1 Residential New Construction (Gas)	\$225,443	\$0	\$225,443	\$168,038	\$11,572	\$179,610	\$405,052
2 ENERGY STAR HVAC (Gas)	\$2,076,979	\$0	\$2,076,979	\$334,920	\$31,048	\$365,968	\$2,442,947
3 EnergyWise (Gas)	\$7,486,302	\$0	\$7,486,302	\$1,227,464	\$90,177	\$1,317,642	\$8,803,943
4 EnergyWise Multi Family (Gas)	\$443,428	\$0	\$443,428	\$147,564	\$21,401	\$168,965	\$612,392
5 Home Energy Reports (Gas)	\$334,183	\$0	\$334,183	\$13,371	\$7,439	\$20,810	\$354,993
6 ENERGY STAR Lighting (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7 Residential Consumer Products (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8 Residential Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9 Energy Efficiency Education Programs (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10 Residential Pilots (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11 Community Based Initiatives - Residential (Gas)	\$700	\$0	\$700	\$31,801	\$0	\$31,801	\$32,501
12 Comprehensive Marketing Residential (Gas)	\$0	\$0	\$0	\$80,031	\$60	\$80,091	\$80,091
13 OTHER RESIDENTIAL PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14 Subtotal Non-Income Eligible Residential	\$10,567,034	\$0	\$10,567,034	\$2,003,188	\$161,698	\$2,164,886	\$12,731,920
15 Single Family - Income Eligible Services (gas)	\$1,600,338	\$0	\$1,600,338	\$479,060	\$60,667	\$539,727	\$2,140,065
16 Income Eligible Multifamily (Gas)	\$1,442,159	\$0	\$1,442,159	\$275,950	\$37,393	\$313,343	\$1,755,502
17 Subtotal Income Eligible Residential	\$3,042,498	\$0	\$3,042,498	\$755,009	\$98,061	\$853,070	\$3,895,568
18 Large Commercial New Construction (Gas)	\$1,309,828	\$134,086	\$1,175,742	\$995,273	\$131,242	\$1,126,515	\$2,302,257
19 Large Commercial Retrofit (Gas)	\$849,625	\$117,376	\$732,249	\$1,330,854	\$194,306	\$1,525,160	\$2,257,409
20 Small Business Direct Install (Gas)	\$70,116	\$0	\$70,116	\$23,639	\$3,809	\$27,447	\$97,563
21 Commercial Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
22 Commercial Pilots (Gas)	\$94,950	\$0	\$94,950	\$0	\$0	\$0	\$94,950
23 Comprehensive Marketing C&I (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
24 Community Based Initiatives - C&I (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25 Commercial & Industrial Multifamily (Gas)	\$198,061	\$0	\$198,061	\$70,977	\$27,748	\$98,726	\$296,787
26 Finance Costs (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
27 OTHER C&I PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
28 Subtotal Commercial & Industrial	\$2,522,580	\$251,462	\$2,271,118	\$2,420,743	\$357,105	\$2,777,848	\$5,048,966
29 OER (Gas)	\$0	\$0	\$0	\$361,208	\$0	\$361,208	\$361,208
30 EERMC (Gas)	\$0	\$0	\$0	\$360,554	\$0	\$360,554	\$360,554
31 Subtotal Regulatory	\$0	\$0	\$0	\$721,762	\$0	\$721,762	\$721,762
32 TOTAL All Sectors	\$16,132,111	\$251,462	\$15,880,649	\$5,900,702	\$616,864	\$6,517,566	\$22,398,215
OTHER COSTS NOT LISTED ABOVE (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0

¹ The Company's accounting system treats all payments made directly to customers and vendors as one category of vendor expenses.

Rebates paid to customers through service contracts with vendors are included in the service cost of the vendor.

² This category has formally been labeled in prior year annual reports as "Rebates and Other Customer Incentives" in annual reports.

³ This cost category includes service costs for customers plus rebates/incentives processed and paid to customers by the vendor, but excludes rebates paid directly to customers by the Company in col (b).

⁴ The term "External Costs" has been used in Company reports to identify a subset of vendor costs not included in "Rebates and Other Customer Incentives".

⁵ In 2020, Home Energy Reports was categorized under column (c) in this schedule, starting in the 2021 Annual Plan, Home Energy Reports costs currently categorized under column (c) will be recategorized under column (f)

Schedule 4 - Program Planning & Administration

	(a) (b)+(e)+(h)	(b) (c)+(d)	(c)	(d)	(e) (f)+(g)	(f)	(g)	(h) (i)+(j)	(i)	(j)	(h) (i)+(j)	(f)	(i)	(j)
	Total Costs	Total National Grid Labor Costs	National Grid Direct Labor	National Grid Allocated Labor	Total National Grid Employee Expenses	National Grid Direct Employee Expenses	National Grid Allocated Employee Expenses	External Services Costs	Direct External Services Costs	External Services Costs Originating from an Allocation	Other Costs any	Other Direct Costs	Other Costs Originating from an Allocation	
1 Residential New Construction (Gas)	\$35,633	\$24,921	\$13,701	\$11,219	\$319	\$127	\$193	\$10,393	\$0	\$10,393	\$0	\$0	\$0	
2 ENERGY STAR HVAC (Gas)	\$84,179	\$56,115	\$26,786	\$29,329	\$713	\$210	\$503	\$27,351	\$181	\$27,169	\$0	\$0	\$0	
3 EnergyWise (Gas)	\$157,972	\$85,887	\$9,501	\$76,386	\$1,324	\$13	\$1,311	\$70,761	\$0	\$70,761	\$0	\$0	\$0	
4 EnergyWise Multi Family (Gas)	\$47,555	\$30,221	\$11,876	\$18,345	\$339	\$24	\$315	\$16,994	\$0	\$16,994	\$0	\$0	\$0	
5 Home Energy Reports (Gas)	\$15,263	\$9,248	\$2,873	\$6,375	\$109	\$0	\$109	\$5,906	\$0	\$5,906	\$0	\$0	\$0	
6 ENERGY STAR Lighting (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
7 Residential Consumer Products (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
8 Residential Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
9 Energy Efficiency Education Programs (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
10 Residential Pilots (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
11 Community Based Initiatives - Residential (Gas)	\$1,905	\$1,905	\$1,905	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
12 Comprehensive Marketing Residential (Gas)	\$125	\$64	\$0	\$64	\$1	\$0	\$1	\$60	\$0	\$60	\$0	\$0	\$0	
13 OTHER RESIDENTIAL PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
14 Subtotal Non-Income Eligible Residential	\$342,632	\$208,361	\$66,641	\$141,719	\$2,806	\$374	\$2,432	\$131,465	\$181	\$131,284	\$0	\$0	\$0	
15 Single Family - Income Eligible Services (gas)	\$112,598	\$63,071	\$10,657	\$52,414	\$972	\$73	\$900	\$48,554	\$0	\$48,554	\$0	\$0	\$0	
16 Income Eligible Multifamily (Gas)	\$64,795	\$36,706	\$6,961	\$29,745	\$535	\$24	\$510	\$27,555	\$0	\$27,555	\$0	\$0	\$0	
17 Subtotal Income Eligible Residential	\$177,393	\$99,777	\$17,618	\$82,159	\$1,507	\$97	\$1,410	\$76,109	\$0	\$76,109	\$0	\$0	\$0	
18 Large Commercial New Construction (Gas)	\$87,637	\$49,527	\$9,339	\$40,188	\$594	\$127	\$467	\$37,517	\$48	\$37,469	\$0	\$0	\$0	
19 Large Commercial Retrofit (Gas)	\$352,451	\$114,953	\$12,327	\$102,626	\$1,192	\$0	\$1,192	\$236,307	\$140,623	\$95,683	\$0	\$0	\$0	
20 Small Business Direct Install (Gas)	\$3,964	\$2,039	\$0	\$2,039	\$24	\$0	\$24	\$1,901	\$0	\$1,901	\$0	\$0	\$0	
21 Commercial Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
22 Commercial Pilots (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
23 Comprehensive Marketing C&I (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
24 Community Based Initiatives - C&I (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
25 Commercial & Industrial Multifamily (Gas)	\$30,353	\$15,602	\$0	\$15,602	\$205	\$24	\$181	\$14,546	\$0	\$14,546	\$0	\$0	\$0	
26 Finance Costs (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
27 OTHER C&I PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
28 Subtotal Commercial & Industrial	\$474,405	\$182,120	\$21,666	\$160,454	\$2,014	\$151	\$1,863	\$290,271	\$140,671	\$149,600	\$0	\$0	\$0	
29 OER (Gas)	\$361,208	\$0	\$0	\$0	\$0	\$0	\$0	\$361,208	\$361,208	\$0	\$0	\$0	\$0	
30 EERMC (Gas)	\$360,554	\$0	\$0	\$0	\$0	\$0	\$0	\$360,554	\$360,554	\$0	\$0	\$0	\$0	
31 Subtotal Regulatory	\$721,762	\$0	\$0	\$0	\$0	\$0	\$0	\$721,762	\$721,762	\$0	\$0	\$0	\$0	
32 TOTAL All Sectors	\$1,716,192	\$490,258	\$105,925	\$384,332	\$6,327	\$622	\$5,706	\$1,219,607	\$862,614	\$356,993	\$0	\$0	\$0	
OTHER COSTS NOT LISTED ABOVE (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	

Schedule 5 - Marketing

	(a) (b)+(e)-(h)+(k)	(b) (c)+(d)	(c)	(d)	(e) (f)+(g)	(f)	(g)	(h) (i)+(j)	(i)	(j)	(k) (l)+(m)	(l)	(m)
	Total Costs	Total National Grid Labor Costs	National Grid Direct Labor	National Grid Allocated Labor	Total National Grid Employee Expenses	National Grid Direct Employee Expenses	National Grid Allocated Employee Expenses	External Services Costs	Direct External Services Costs	External Services Costs Originating from an Allocation	Other Costs any	(if Other Direct Costs	Other Costs Originating from an Allocation
1 Residential New Construction (Gas)	\$49	\$48	\$0	\$48	\$1	\$0	\$1	\$0	\$0	\$0	\$0	\$0	\$0
2 ENERGY STAR HVAC (Gas)	\$192,411	\$9,165	\$6,895	\$2,270	\$155	\$104	\$50	\$183,092	\$183,092	\$0	\$0	\$0	\$0
3 EnergyWise (Gas)	\$79,200	\$12,024	\$10,844	\$1,180	\$26	\$0	\$26	\$67,150	\$67,150	\$0	\$0	\$0	\$0
4 EnergyWise Multi Family (Gas)	\$35,293	\$7,307	\$6,836	\$472	\$10	\$0	\$10	\$27,975	\$27,975	\$0	\$0	\$0	\$0
5 Home Energy Reports (Gas)	\$18	\$17	\$0	\$17	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6 ENERGY STAR Lighting (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7 Residential Consumer Products (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8 Residential Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9 Energy Efficiency Education Programs (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10 Residential Pilots (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11 Community Based Initiatives - Residential (Gas)	\$31,801	\$0	\$0	\$0	\$0	\$0	\$0	\$31,801	\$31,801	\$0	\$0	\$0	\$0
12 Comprehensive Marketing Residential (Gas)	\$83,305	\$3,227	\$2,177	\$1,050	\$48	\$24	\$23	\$80,031	\$80,031	\$0	\$0	\$0	\$0
13 OTHER RESIDENTIAL PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14 Subtotal Non-Income Eligible Residential	\$422,076	\$31,788	\$26,752	\$5,036	\$241	\$129	\$112	\$390,047	\$390,047	\$0	\$0	\$0	\$0
15 Single Family - Income Eligible Services (gas)	\$35,557	\$4,117	\$3,632	\$485	\$11	\$0	\$11	\$31,429	\$31,429	\$0	\$0	\$0	\$0
16 Income Eligible Multifamily (Gas)	\$3,580	\$175	\$0	\$175	\$4	\$0	\$4	\$3,401	\$3,401	\$0	\$0	\$0	\$0
17 Subtotal Income Eligible Residential	\$39,137	\$4,292	\$3,632	\$660	\$15	\$0	\$15	\$34,830	\$34,830	\$0	\$0	\$0	\$0
18 Large Commercial New Construction (Gas)	\$160,078	\$2,845	\$0	\$2,845	\$202	\$177	\$25	\$157,031	\$157,031	\$0	\$0	\$0	\$0
19 Large Commercial Retrofit (Gas)	\$247,661	\$15,938	\$11,279	\$4,659	\$772	\$731	\$42	\$230,950	\$230,950	\$0	\$0	\$0	\$0
20 Small Business Direct Install (Gas)	\$31,170	\$8,207	\$7,554	\$653	\$6	\$0	\$6	\$22,957	\$22,957	\$0	\$0	\$0	\$0
21 Commercial Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
22 Commercial Pilots (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
23 Comprehensive Marketing C&I (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
24 Community Based Initiatives - C&I (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25 Commercial & Industrial Multifamily (Gas)	\$14,464	\$408	\$0	\$408	\$4	\$0	\$4	\$14,053	\$14,053	\$0	\$0	\$0	\$0
26 Finance Costs (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
27 OTHER C&I PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
28 Subtotal Commercial & Industrial	\$453,373	\$27,398	\$18,833	\$8,565	\$984	\$908	\$76	\$424,991	\$424,991	\$0	\$0	\$0	\$0
29 OER (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
30 EERMC (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
31 Subtotal Regulatory	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
32 TOTAL All Sectors	\$914,587	\$63,479	\$49,217	\$14,261	\$1,240	\$1,037	\$203	\$849,868	\$849,868	\$0	\$0	\$0	\$0
OTHER COSTS NOT LISTED ABOVE (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Schedule 6 - Cost of services and product rebates/incentives provided to customers (1)

Annual threshold > \$100,000 for evaluation of allocation between Col. (b) vs. Col. (c)
 Default Assumption, expenses allocated to Col. (c)

	(a) (b)+(c)	(b)	(c)	(d)
	Total payments for services and product rebates/incentives for customers which are paid directly to a customer or provided to customer via a vendor	Rebate/Incentive Payments Directly Paid to Customers	Payments for Services and Product Rebates/Incentives for customers which are made to vendors and then provided to customers	Description of External Payments
1	Residential New Construction (Gas) \$225,443	\$0	\$225,443	Payments are made to external vendor(s) that are then used to provide rebates to customers for approved energy efficiency products that are installed in new customer dwellings. Payments also include a home performance testing service at no cost to the customer.
2	ENERGY STAR HVAC (Gas) \$2,076,979	\$0	\$2,076,979	Payments are made to external vendor(s) that are then used to provide rebates to customers for approved energy efficiency HVAC products that are installed in rate payer customer dwellings as well as to provide zero interest loans to customers for approved energy efficiency HVAC products. Payments are made to external vendors to provide contractor training and quality control inspections for the installation of approved energy efficiency HVAC products.
3	EnergyWise (Gas) \$7,486,302	\$0	\$7,486,302	Payments are made to external vendor(s) that installed energy efficiency products at negotiated, discounted prices in single family customer dwellings.
4	EnergyWise Multi Family (Gas) \$443,428	\$0	\$443,428	Payments are made to external vendors that are then used to discount approved energy efficiency products that are installed in multifamily customer dwellings. Payments also include a service to customers in the form of no cost energy assessments.
5	Home Energy Reports (Gas) \$334,183	\$0	\$334,183	Payments include costs associated with the delivery of the program. The HER program does not feature direct customer incentives or rebates. Instead the funds in this category are utilized in the production and delivery of Home Energy Reports. The costs associated with this effort are categorized as 'Rebates and Other Incentives' because the reports drive customer actions to change energy consumption behaviors, resulting in energy cost savings to those customers and benefits to all customers.
6	ENERGY STAR Lighting (Gas) \$0	\$0	\$0	N/A
7	Residential Consumer Products (Gas) \$0	\$0	\$0	N/A
8	Residential Connected Solutions (Gas) \$0	\$0	\$0	N/A
9	Energy Efficiency Education Programs (Gas) \$0	\$0	\$0	N/A
10	Residential Pilots (Gas) \$0	\$0	\$0	N/A
11	Community Based Initiatives - Residential (Gas) \$700	\$0	\$700	Payments can either be made directly to a community or payments can be made to external vendor(s) that are then used to discount approved energy efficiency products for communities participating in the Community Based Initiative.
12	Comprehensive Marketing Residential (Gas) \$0	\$0	\$0	N/A
13	OTHER RESIDENTIAL PROGRAMS (Gas) \$0	\$0	\$0	N/A
14	Subtotal Non-Income Eligible Residential \$10,567,034	\$0	\$10,567,034	
15	Single Family - Income Eligible Services (gas) \$1,600,338	\$0	\$1,600,338	Payments are made to external vendors that are then used to cover 100% of the cost for approved energy efficiency weatherization and heating systems that are installed in single family income eligible customer dwellings.
16	Income Eligible Multifamily (Gas) \$1,442,159	\$0	\$1,442,159	Payments are made to external vendors that are then used to cover 100% of the cost for approved energy efficiency products that are installed in multifamily customer dwellings. Payments also include a no cost service to customers in the form of no cost energy assessments.
17	Subtotal Income Eligible Residential \$3,042,498	\$0	\$3,042,498	
18	Large Commercial New Construction (Gas) \$1,309,828	\$134,086	\$1,175,742	Payments are made to external vendor(s) that are then used to discount approved energy efficiency products that are installed in customer facilities. Payments are also made directly to customers for the installation of approved energy efficiency measures.
19	Large Commercial Retrofit (Gas) \$849,625	\$117,376	\$732,249	Payments are made to external vendor(s) that are then used to discount approved energy efficiency products that are installed in customer facilities. Payments are also made directly to customers for the installation of approved energy efficiency measures.
20	Small Business Direct Install (Gas) \$70,116	\$0	\$70,116	Payments are made to external vendor(s) that are then used to discount approved energy efficiency products that are installed in customer facilities. Payments also include no cost services to customers including no cost energy assessments.
21	Commercial Connected Solutions (Gas) \$0	\$0	\$0	N/A
22	Commercial Pilots (Gas) \$94,950	\$0	\$94,950	Incentive payments are made directly to customers for participation in this program.
23	Comprehensive Marketing C&I (Gas) \$0	\$0	\$0	N/A
24	Community Based Initiatives - C&I (Gas) \$0	\$0	\$0	Payments made to the Rhode Island Infrastructure Bank are leveraged and lent to municipalities to cover the municipality's cost to bring an energy efficiency project to fruition. Costs may include energy efficiency equipment and related services.
25	Commercial & Industrial Multifamily (Gas) \$198,061	\$0	\$198,061	N/A
26	Finance Costs (Gas) \$0	\$0	\$0	N/A
27	OTHER C&I PROGRAMS (Gas) \$0	\$0	\$0	N/A
28	Subtotal Commercial & Industrial \$2,522,580	\$251,462	\$2,271,118	
29	OER (Gas) \$0	\$0	\$0	N/A
30	EERMC (Gas) \$0	\$0	\$0	N/A
31	Subtotal Regulatory \$0	\$0	\$0	
32	TOTAL All Sectors \$16,132,111	\$251,462	\$15,880,649	
	OTHER COSTS NOT LISTED ABOVE (Gas) \$0	\$0	\$0	

(1) In the 2020 Energy Efficiency Annual Plan filing, this cost category was referred to as "Rebates and Other Incentives"

Schedule 7 - Sales, Technical Assistance & Training (STAT)

	(a) (b)+(e)+(h)+(k)	(b) (c)+(d)	(c)	(d)	(e) (f)+(g)	(f)	(g)	(h) (i)+(j)	(i)	(j)	(k) (l)+(m)	(l)	(m)
	Total Costs	Total National Grid Labor Costs	National Grid Direct Labor	National Grid Allocated Labor	Total National Grid Employee Expenses	National Grid Direct Employee Expenses	National Grid Allocated Employee Expenses	External Services Costs	Direct External Services Costs	External Services Costs Originating from an Allocation	Other Costs any	(If Other Direct Costs	Other Costs Originating from an Allocation
1 Residential New Construction (Gas)	\$161,019	\$752	\$0	\$752	\$2	\$0	\$2	\$160,265	\$159,669	\$596	\$0	\$0	\$0
2 ENERGY STAR HVAC (Gas)	\$155,024	\$1,881	\$0	\$1,881	\$5	\$0	\$5	\$153,138	\$151,647	\$1,491	\$0	\$0	\$0
3 EnergyWise (Gas)	\$1,109,475	\$7,660	\$1,023	\$6,637	\$18	\$0	\$18	\$1,101,798	\$1,096,536	\$5,261	\$0	\$0	\$0
4 EnergyWise Multi Family (Gas)	\$90,520	\$1,048	\$0	\$1,048	\$3	\$0	\$3	\$89,469	\$88,639	\$830	\$0	\$0	\$0
5 Home Energy Reports (Gas)	\$1,123	\$657	\$623	\$35	\$0	\$0	\$0	\$465	\$438	\$27	\$0	\$0	\$0
6 ENERGY STAR Lighting (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7 Residential Consumer Products (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8 Residential Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9 Energy Efficiency Education Programs (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10 Residential Pilots (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11 Community Based Initiatives - Residential (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12 Comprehensive Marketing Residential (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
13 OTHER RESIDENTIAL PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14 Subtotal Non-Income Eligible Residential	\$1,517,161	\$11,997	\$1,646	\$10,352	\$28	\$0	\$28	\$1,505,136	\$1,496,929	\$8,206	\$0	\$0	\$0
15 Single Family - Income Eligible Services (gas)	\$462,052	\$8,032	\$0	\$8,032	\$22	\$0	\$22	\$453,998	\$447,631	\$6,367	\$0	\$0	\$0
16 Income Eligible Multifamily (Gas)	\$204,370	\$2,133	\$0	\$2,133	\$6	\$0	\$6	\$202,231	\$200,541	\$1,691	\$0	\$0	\$0
17 Subtotal Income Eligible Residential	\$666,422	\$10,164	\$0	\$10,164	\$28	\$0	\$28	\$656,230	\$648,171	\$8,058	\$0	\$0	\$0
18 Large Commercial New Construction (Gas)	\$986,651	\$216,203	\$156,115	\$60,089	\$8,145	\$6,424	\$1,721	\$762,303	\$731,080	\$31,223	\$0	\$0	\$0
19 Large Commercial Retrofit (Gas)	\$1,331,165	\$491,167	\$401,624	\$89,543	\$21,914	\$19,350	\$2,564	\$818,085	\$771,557	\$46,528	\$0	\$0	\$0
20 Small Business Direct Install (Gas)	\$27,345	\$26,074	\$23,757	\$2,317	\$66	\$0	\$66	\$1,204	\$0	\$1,204	\$0	\$0	\$0
21 Commercial Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
22 Commercial Pilots (Gas)	\$1,975	\$1,975	\$1,975	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
23 Comprehensive Marketing C&I (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
24 Community Based Initiatives - C&I (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25 Commercial & Industrial Multifamily (Gas)	\$50,246	\$16,884	\$7,696	\$9,188	\$263	\$0	\$263	\$33,099	\$28,324	\$4,774	\$0	\$0	\$0
26 Finance Costs (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
27 OTHER C&I PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
28 Subtotal Commercial & Industrial	\$2,397,382	\$752,303	\$591,167	\$161,136	\$30,388	\$25,774	\$4,614	\$1,614,691	\$1,530,961	\$83,730	\$0	\$0	\$0
29 OER (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
30 EERMC (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
31 Subtotal Regulatory	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
32 TOTAL All Sectors	\$4,580,964	\$774,465	\$592,812	\$181,652	\$30,443	\$25,774	\$4,670	\$3,776,056	\$3,676,062	\$99,994	\$0	\$0	\$0
OTHER COSTS NOT LISTED ABOVE (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Schedule 8 - Evaluation & Market Research

	(a) (b)+(e)+(h)+(k)	(b) (c)+(d)	(c)	(d)	(e) (f)+(g)	(f)	(g)	(h) (i)+(j)	(i)	(j)	(k) (l)+(m)	(l)	(m)
	Total Costs	Total National Grid Labor Costs	National Grid Direct Labor	National Grid Allocated Labor	Total National Grid Employee Expenses	National Grid Direct Employee Expenses	National Grid Allocated Employee Expenses	External Services Costs	Direct External Services Costs	External Services Costs Originating from an Allocation	Other Costs any	(if Other Direct Costs	Other Costs Originating from an Allocation
1 Residential New Construction (Gas)	\$14,486	\$5,532	\$4,969	\$564	\$2	\$2	\$1	\$8,952	\$8,369	\$583	\$0	\$0	\$0
2 ENERGY STAR HVAC (Gas)	\$12,469	\$10,078	\$7,768	\$2,310	\$3	\$0	\$3	\$2,388	\$0	\$2,388	\$0	\$0	\$0
3 EnergyWise (Gas)	\$91,641	\$13,693	\$0	\$13,693	\$15	\$0	\$15	\$77,933	\$63,779	\$14,155	\$0	\$0	\$0
4 EnergyWise Multi Family (Gas)	\$42,947	\$8,416	\$4,957	\$3,459	\$6	\$2	\$4	\$34,526	\$30,950	\$3,576	\$0	\$0	\$0
5 Home Energy Reports (Gas)	\$15,898	\$1,457	\$0	\$1,457	\$2	\$0	\$2	\$14,439	\$12,933	\$1,506	\$0	\$0	\$0
6 ENERGY STAR Lighting (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7 Residential Consumer Products (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8 Residential Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9 Energy Efficiency Education Programs (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10 Residential Pilots (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11 Community Based Initiatives - Residential (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
12 Comprehensive Marketing Residential (Gas)	\$1	\$1	\$0	\$1	\$0	\$0	\$0	\$1	\$0	\$1	\$0	\$0	\$0
13 OTHER RESIDENTIAL PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
14 Subtotal Non-income Eligible Residential	\$177,442	\$39,176	\$17,693	\$21,483	\$27	\$3	\$24	\$138,238	\$116,030	\$22,208	\$0	\$0	\$0
15 Single Family - Income Eligible Services (gas)	\$11,309	\$5,558	\$0	\$5,558	\$6	\$0	\$6	\$5,745	\$0	\$5,745	\$0	\$0	\$0
16 Income Eligible Multifamily (Gas)	\$91,928	\$11,763	\$3,881	\$7,882	\$10	\$1	\$9	\$80,156	\$72,008	\$8,148	\$0	\$0	\$0
17 Subtotal Income Eligible Residential	\$103,238	\$17,320	\$3,881	\$13,440	\$16	\$1	\$15	\$85,901	\$72,008	\$13,893	\$0	\$0	\$0
18 Large Commercial New Construction (Gas)	\$181,765	\$11,996	\$141	\$11,854	\$105	\$0	\$105	\$169,664	\$107,114	\$62,550	\$0	\$0	\$0
19 Large Commercial Retrofit (Gas)	\$249,779	\$9,873	\$0	\$9,873	\$87	\$0	\$87	\$239,819	\$187,724	\$52,095	\$0	\$0	\$0
20 Small Business Direct Install (Gas)	\$1,519	\$133	\$0	\$133	\$1	\$0	\$1	\$1,385	\$681	\$703	\$0	\$0	\$0
21 Commercial Connected Solutions (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
22 Commercial Pilots (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
23 Comprehensive Marketing C&I (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
24 Community Based Initiatives - C&I (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
25 Commercial & Industrial Multifamily (Gas)	\$40,336	\$3,293	\$1,696	\$1,597	\$15	\$1	\$14	\$37,028	\$28,600	\$8,428	\$0	\$0	\$0
26 Finance Costs (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
27 OTHER C&I PROGRAMS (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
28 Subtotal Commercial & Industrial	\$473,399	\$25,295	\$1,837	\$23,458	\$208	\$1	\$207	\$447,896	\$324,120	\$123,776	\$0	\$0	\$0
29 OER (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
30 EERMC (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
31 Subtotal Regulatory	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
32 TOTAL All Sectors	\$754,078	\$81,792	\$23,411	\$58,381	\$252	\$6	\$246	\$672,035	\$512,158	\$159,877	\$0	\$0	\$0
OTHER COSTS NOT LISTED ABOVE (Gas)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Schedule 9 - Shared Cross-Jurisdictional Costs (Non-Labor)

>\$100,000 only for Rhode Island

(Non-Labor Services/Costs that are Shared with Other Jurisdictions and are Allocated to Rhode Island)

	(a)	(b) (c)x(a)	(b) (c)x(a)	(b) (c)x(a)	(c)	(c)	(c)	(d)	(e)	(f)
Description of Service/Cost	Total Cost Used as Basis for Allocation	Total Allocated to Rhode Island	Total Allocated to RI-ELEC	Total Allocated to RI-GAS	% to Rhode Island	% to RI-ELEC	% to RI-GAS	% to Mass.	% to New York	Description of Allocation Methodology
1 IS Vendor. Software work charged to DSM - InDemand Support & Releases	\$2,154,742	\$390,008	\$282,271	\$107,737	18%	13%	5%	64%	18%	Based on Overall Jurisdictional 2020 EE Budgets - ALL RI; ALL UPSTATE NY; ALL MA; ALL DOWNSTATE NY

Schedule 10 - Methods for Allocating Costs >\$500,000 Across Rhode Island Programs/Sectors

	(a)	(b)	(c)	(d)	(f)
Description of Cost Allocated	Total Cost Allocated	Allocation to Non-Eligible Residential Programs	Allocation to Eligible Residential Programs	Allocation to C&I Programs	Description of Allocation Methodology
1 IS Vendor Costs for InDemand Releases - RI-GAS	\$128,396	\$57,118	\$33,113	\$38,165	Based on PP&A Budgets of Programs Designated to Receive Allocations
2					
3					
4					
5 Labor Allocated to PP&A	\$384,332	\$141,719	\$82,159	\$160,454	Based on PP&A Budgets of Programs Designated to Receive Allocations
6 Labor Allocated to Marketing	\$14,261	\$5,036	\$660	\$8,565	Based on Marketing Budgets of Programs Designated to Receive Allocations
7 Labor Allocated to STAT	\$181,652	\$10,352	\$10,164	\$161,136	Based on STAT Budgets of Programs Designated to Receive Allocations
8 Labor Allocated to Evaluation & Market Research	\$58,381	\$21,483	\$13,440	\$23,458	Based on Evaluation & Market Research Budgets of Programs Designated to Receive Allocations
9 ALLOCATED LABOR - RI-GAS TOTAL	\$638,626	\$178,590	\$106,423	\$353,613	

Attachment 3

Case Studies and Evaluation Summaries

Emerging Zero Net Energy Building Case Study



Credit ©BriggsKnowles A+D



OVERVIEW

Predicted Energy Use Intensity (EUI):

23.2 kBtu/sf/yr

Renewable Energy Production:

25.5 kBtu/sf/yr

Predicted Net EUI: -2.3 kBtu/sf

Predicted HERS Index: Unit A: -8,
Unit B: 0

Home Sizes: 750-790 sf

Location: City of Providence, RI

Construction Type: Five single family new construction homes

Construction Years: 2019-2021

Occupation Date: December 2020 – Spring 2021

Total Development Cost: \$1.5 million

SHERIDAN SMALL HOMES

The story of Sheridan Small Homes begins with a spark of inspiration stemming from Rhode Island School of Design (RISD) architecture students. In 2018, RISD students participated in the Race to Zero Student Design Competition, a collegiate design challenge sponsored by the U.S. Department of Energy. The students were selected as [finalists](#) for their affordable, energy efficient home prototypes.

Learning of their success, the City of Providence, RI saw an opportunity for the RISD students to help them achieve multiple city goals: provide more affordable housing, address climate change, and increase local workforce understanding of achievable, high performance construction techniques.

In Providence, RI, 70% of carbon emissions are from buildings. Cutting building energy use and removing fossil gas are key parts of the strategy to become carbon neutral by 2050, as detailed in the City's [Climate Justice Plan](#).

The City approached the RISD team and Professor Jonathan Knowles about a partnership with One Neighborhood Builders, a community based affordable housing developer. The team found a three-quarter acre site zoned for multiple units, conveniently located on a bike path to downtown, near ballfields, and an adjacent neighborhood. The lot offered an opportunity for construction of new housing on lots typically not large enough for new homes. Working together, the team designed and developed five zero net energy, all-electric, solar-powered homes. As a zero net energy project, the homes are expected to produce as much energy as they consume over the course of the year.

PROJECT DETAILS:

Climate Zone: 5a

Owner, Developer, and General Contractor: ONE Neighborhood Builders

Architect and PHIUS Consultant: BriggsKnowles A+D

Energy Consultant: CLEARResult

Mechanical and Plumbing: Pinnacle

Electrical: M&M Electric

Solar Consultant: SunWatt Solar

Building Trades Apprentices: Building Futures Rhode Island

Structural: Structures Workshop

Certifications: Pending PHIUS Passive House certification and U.S. Department of Energy Zero Energy Homes certification.



Credit ©BriggsKnowles A+D

Rendering of Unit A. South facing roof provides space for solar photovoltaics while the deep overhangs shade the windows in the summer months.

Each home in the Sheridan Small Homes community will be sold to income-qualified buyers with a starting price point of about \$140,000. Two of the homes will be reserved for families earning no more than 80% of the area median income (AMI), which equates to \$52,400 for a household of two and \$65,500 for a family of four. The other three homes are reserved for families earning less than 120% AMI, or \$78,650 for a couple and \$98,300 for a family of four.

Planning and Design Approach

Project Goals

Sheridan Small Homes project goals include demonstrating the potential of pairing zero net energy design with affordable housing, and providing five income-eligible households with comfortable, functional, and affordable new homes. To achieve these goals, each of the partners incorporated unique and ambitious objectives that resulted in wide-reaching community and environmental benefits.

The City of Providence: Increase affordable housing availability, reduce carbon emissions from energy use in buildings, and promote clean energy sources.

RISD: Provide students with a hands-on opportunity to apply their design, innovation, and energy-responsible concepts to create zero net energy homes.

ONE Neighborhood Builders: Demonstrate the long-term viability of zero net energy affordable housing while training the next generation of construction professionals in zero net energy home construction.

Design Approach

ONE Neighborhood Builders instilled a broad vision of sustainability for the Sheridan Small Homes. In this project, the term 'sustainability' melded concepts of efficiency, reuse, durability, and affordability.

RISD enthusiastically applied their building science knowledge in this real-world application. Professor-Architect Jonathan Knowles guided the design development which was refined by students who rotated through their courses. About 40 students contributed overall, some participated for a portion of the project while others remained from start to finish.



Unit A first and second floor plans with efficient, compact design.

Passive House Institute U.S. Inc. (PHIUS) is a stringent building design and construction standard that requires very air-tight and well-insulated building envelopes as well as properly sized and balanced HVAC systems. Buildings that meet the PHIUS+ standard use 40-60% less energy for space conditioning than conventional buildings and include a thorough Passive House design verification protocol with a stringent quality assurance and quality control program performed on-site by specialized PHIUS+ Raters.

Early in design, the RISD team utilized the Passive House Institute U.S. (PHIUS) modeling software tool. Energy modeling helped to maximize the homes' energy performance and confirm that the designs met the program requirements to achieve PHIUS+ 2018 certification. The PHIUS+2018 standard reduces the energy needed to condition the building and can be used to achieve zero net energy goals.

The student design team created two prototypes, "Unit A" and "Unit B." The designs are similar in size, each has two bedrooms and one and a half bathrooms. Unit A has two balconies, one on each floor while Unit B has one large balcony upstairs.

Community Engagement

Considering how the homes would integrate with the adjacent neighborhood, the team hosted a community meeting to garner input from neighbors. The effort built community support and resulted in interest from potential buyers.

The feedback provided real-world insights from potential homeowners on how they expected to use the space. Community input solidified the "great room" design concept—a floor plan that includes high ceilings and a connected living room and kitchen. Although the design team had considered smaller, efficiency-sized kitchen appliances, potential buyers conveyed the importance of having standard-sized appliances for cooking and entertaining.

Neighbors were interested in porches and balconies that connect indoor and outdoor spaces and make the homes feel larger. They also provided key perspectives on fixtures and siding.

The Long-Term Benefit of Construction Workforce Training

A unique aspect of this project was its commitment to engage Building Futures Rhode Island, a construction apprentice program for low-income community members. The project trained 40 people on Passive House techniques. Leveraging Building Futures Rhode Island reduced construction costs and provided long term industry benefits by training workers on advanced building practices.

Energy Efficiency Strategies and Features

Passive House Standards, Envelope, and Air Tightness

Since heating and cooling are the largest energy loads in a home, the design team focused on maximizing the building envelope to allow for a downsized, all-electric heating and cooling system. While the concept is simple, careful attention must be paid to the details to ensure proper execution.



Unit A rendering in a dense environment.

Envelope. The team initially imagined utilizing a prefabricated panel wall and roof assembly to ensure quality construction. However, working with Building Futures Rhode Island, it became more important to engage the trainees in on-site Passive House construction.

Passive House requires a super-insulated exterior with a contiguous air barrier that connects from roof to foundation. The Sheridan Small Homes R-45 2x6 wall assemblies are heavily insulated, including 4" of continuous exterior polyisocyanurate (polyiso) insulation. Some polyiso insulation was donated from a deconstruction project, reducing costs and diverting materials from the landfill.

Foundation. The homes were designed without basements, reducing the costs associated with excavating, concrete, and basement insulation. Instead, the team used shallow frost footings, which provide cold weather durability without excavation below the frost line. The system is comprised of horizontal expanded polystyrene (EPS) insulation around the outside of the exterior wall footing, and vertically at the footing perimeter. In addition, there is continuous R-40 under-slab insulation, which reduces winter heat transfer from ground contact.

Thermal Mass. Combining slab-on-grade and south-facing windows offers thermal comfort to the homeowners. In winter, the concrete floor serves as thermal mass, storing heat gained from the large south-facing windows during the day and radiating heat back to the living space throughout the evening. This approach improves occupant comfort and reduces heating needs in the winter. In the summer, window overhangs shade the windows and reduce heat gain.

Windows. Windows are a critical part of the design. The homes were thoughtfully oriented in a south-facing arc to maximize solar production and take advantage of solar heat gain in the winter. The team prioritized using highly efficient and affordable windows while providing plenty of natural light to minimize electric lighting needs and provide a healthy living space. The team chose a triple-paned window with a 0.143 U-value and tilt-turn capability, so occupants have flexible options for opening their windows. The European imported windows were comparable in cost to higher-end windows from a traditional U.S. hardware store.

Air Tightness. A key component of Passive House buildings is a tight building envelope, achieved through a continuous air barrier. The tight air barrier minimizes envelope air and water leakage. The extremely air-tight envelope allowed downsized HVAC equipment, reducing the upfront cost.

Building Future Rhode Island apprentices were trained in the careful detailing of the air barrier in wrapping the entire envelope, paying particular attention to the under slab, windows, and roof details to ensure a tight seal.

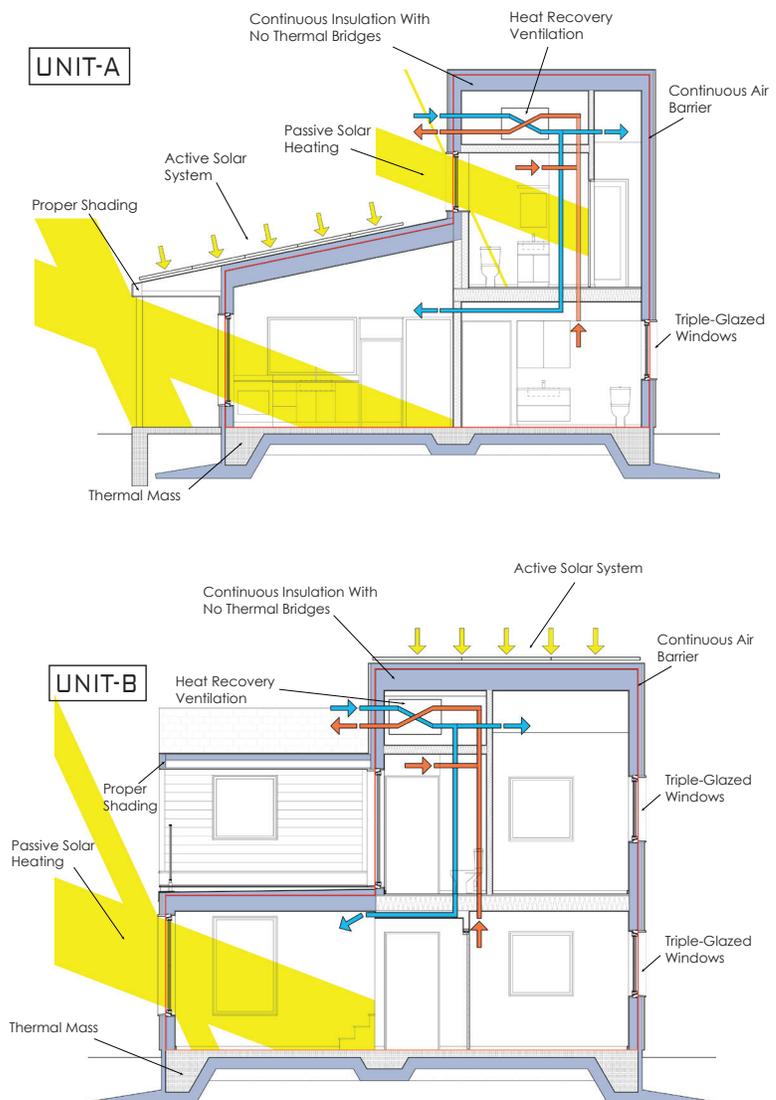
The tightness of the envelope is measured through air changes per hour (ACH). A new home built to Rhode Island's 2015 building code requires three to five ACH, while a Passive House envelope is often less than 1 ACH. The preliminary blower door test for Sheridan Small Homes measured air leakage at 1.3 ACH, meaning that every hour, about one and one-third the volume of air in the home naturally exchanges through leaks in the building envelope. Mechanical ventilation is continuously circulated through the ERV to ensure adequate fresh air exchange without wasting energy.

Heating, Ventilation, and Air Conditioning (HVAC)

The well-designed envelope allowed the team to reduced costs by utilizing a smaller heat pump heating and cooling system. Separating the heating and cooling from the ventilation also allows each system to focus on their designed task and work independently to save energy. Being all-electric, the cost associated with excavating for and laying gas lines to the homes was eliminated.

Heating and Cooling. A similar home built to code may have needed a 12,000 Btu heating unit. The air-tight construction allowed for a single, 9,000 Btu mini-split, ductless heating and cooling system to adequately serve the home and reduce first costs. A single mini-split duct is located in the two-story great room. An exchange transfer duct allows for conditioned air transfer between the first and second floors to ensure thermal comfort.

Ventilation. A small, 80 cubic feet per minute energy recovery ventilation (ERV) is the sole ventilation system. The ERV captures the energy contained in the exhaust of conditioned air—that would otherwise normally be expelled and wasted—and uses it to pretreat/precondition incoming outdoor air. It maximizes fresh air intake and minimizes the heating and cooling load that would be needed to treat the air without an ERV.



The homes have been designed to optimize solar gain in the winter and block the gain in the summer. A tight air barrier, continuous insulation, and minimal thermal bridging create a superior thermal envelope. The passive measures allow for minimally sized active heating and cooling along with balanced ventilation.



Unit B rendering highlighting the connection between the indoor and outdoor living space in a densely organized home arrangement.

Lighting and Appliances

All-LED lighting is predicted to use 30-50% less energy than the Rhode Island building code. The refrigerator, dishwasher, washing machine and dryer are all ENERGY STAR® rated appliances.

Domestic Hot Water

The design team considered various efficient water heating options including tankless on-demand heaters and highly efficient heat pump water heaters. The on-demand system used excessive energy and the heat pump water heater cost did not fit the budget. They ultimately selected a space-saving, 94% efficient 38-gallon standard electric resistance water heater. In Unit A, the water heater is located under the stair. In Unit B, the hot water heater is located in an attic mechanical room.

Solar Energy

The five homes are arranged in a south-facing crescent shape to maximize solar production. The five rooftops are equipped with 78 320-watts photovoltaic (PV) rooftop solar panels: Unit A rooftops have 18 panels, and Unit B rooftops have 12 panels. The PV panels are expected to produce at least as much energy as the homes consume over the course of the year. This includes all energy loads in the house: water heating, plug loads, and heating and cooling—which can account for up to 50% of a home's energy bill in the Northeast. Thanks to Rhode Island Renewable Energy Growth Program (REG Program) administered by National Grid, excess energy produced will be sold back to the grid to the financial advantage of the homeowners.

Development Costs and Financing

To maximize affordability and energy efficiency, the project sought opportunities for reducing first costs. Some ways in which the project costs were reduced include:

- Eliminating trenching, pipelines, and permitting for natural gas lines and connections.
- Excluding basements avoided the cost of excavation, concrete, basement insulation, and labor.
- Utilizing Building Futures Rhode Island (which charged a much lower, flat fee) for construction services instead of a traditional general contractor.
- Engaging RISD for design services instead of a conventional design firm.
- Focusing on insulation and airtightness allowed for downsizing the HVAC systems.
- Leveraging / repurposing donated materials, including some insulation and kitchen cabinetry.

Construction hard costs such as materials, labor, mechanical, electrical, plumbing, and all site work totaled \$1,213,018 or \$242,604 per house. These costs exclude utility connections, septic costs, land cost, permitting, design costs and energy modeling. The total development cost was about \$1.52 million, or about \$304,000 per home.



Two Unit As under construction. The house on the left shows the continuous exterior insulation and rain screen system prior to siding installation.

The project was funded through a [variety of sources](#), including:

- [Rhode Island Housing](#) construction loan.
- Grants from the [Rhode Island Housing Homeownership Investment Fund](#).
- [Zero Energy for the Ocean State \(ZEOS\)](#), a program in partnership with Rhode Island Housing and the [Rhode Island Office of Energy Resources](#) and National Grid.
- [Home Investment Partnership Program \(HOME\)](#), a federal program funded through the Department of Housing and Urban Development and distributed by the City of Providence, Rhode Island.
- A private donor.

Looking Ahead: Long-term Energy Monitoring and Maintenance

To assure these all-electric, solar powered homes function as planned, ONE Neighborhood Builders will serve as a property manager. Like a condo association fee, ONE Neighborhood Builders will collect a monthly fee from homeowners to cover the cost of maintenance—landscaping/grounds, garbage service, solar PV maintenance, garbage collection, the monthly utility delivery service fee, and other ongoing maintenance.

As a requirement of having received funding through ZEOS, ONE Neighborhood Builders will monitor the complex's energy use over time. Each home is equipped with energy monitoring system that collects ongoing energy use data delineated heating and cooling, ventilation, laundry, hot water, and plug loads. When problems are observed, ONE Neighborhood Builder or the homeowner can remedy the issue in a timely manner. Data collected from these homes can inform priorities for future affordable housing developments.

Challenging the conventional mindset that affordability and sustainability is not financially feasible, Sheridan Small Homes demonstrates that compact, zero-emissions housing can help provide affordable, comfortable, and beautiful homes to low-income families.

Homeowners will be able to monitor their energy use through an online app. New homeowners will receive information about operating their new all-electric home, including information about the solar energy produced, HVAC operations, and use of the ERV.

Lessons Learned

Challenging the conventional mindset that affordability and sustainability is not financially feasible, Sheridan Small Homes demonstrates that compact, zero-emissions housing can help provide affordable, comfortable, and beautiful homes to low-income families. The Passive House construction is air-tight and super insulated, which prevents moisture from entering the home, avoiding mold and associated health problems over the long term. The project has amounted to a quadruple-win:

1. RISD students gained real-life experience applying design, innovation, and energy-responsible design concepts such as efficiency, solar, and on-site energy optimization, and other passive design strategies to design zero net energy homes.
2. Upcoming construction workforce trainees gained valuable hands-on experience in zero net energy construction.
3. The City of Providence gained progress toward achieving climate change goals, and additional affordable housing units.
4. Low-income families have beautiful new homes with low monthly utility bills, located with convenient access to mass transit or biking for commuting.



National Grid is an electricity, natural gas, and clean energy delivery company serving more than 20 million people through our networks in New York, Massachusetts, and Rhode Island. We offer technical assistance, financial incentives, and other support to accelerate market uptake of zero net energy and zero net energy ready buildings. In Rhode Island, our Residential New Construction Program offers support to all new homes or major renovations to help achieve the greatest energy efficiency possible.

Learn more at nationalgridus.com/Services-Rebates?customerType=For+Homeowners&locations=Rhode+Island&interestedIn=Services+for+New+Construction

New Buildings Institute (NBI) developed this case study on behalf of National Grid. For more ZNE resources, visit www.gettingtozeroforum.org/resource-hub



Executive Summary

National Grid offers EWSF to help customers who live in one- to four-unit residential buildings in Rhode Island improve the efficiency of their homes. The program offers whole-home energy assessments during which trained assessors and technicians directly install a variety of no-cost efficiency measures and identify opportunities for larger energy saving improvements such as weatherization (i.e., air sealing and insulation). In 2019, EWSF completed more than 12,000 home energy assessments and helped more than 3,000 customers insulate their homes.

Why Evaluation?

National Grid uses evaluation to retrospectively assess the performance of its programs and estimate future program savings. In March 2020, National Grid contracted with Cadeo and ILLUME Advising, third-party energy efficiency program evaluators, to complete an impact and process evaluation of EWSF 2017-2019 program years. The evaluation produced verified energy savings for every EWSF measure, and yielded insights and recommendations National Grid can use to continue improving the program.

Key Impact Findings

The evaluation team used three complementary methods - billing analysis, engineering algorithms, and building simulation - to determine savings for every EWSF measure. The program's key measures are lighting (LED bulbs and fixtures) and weatherization, which collectively generated more than 80% of the program's annual 2019 savings.

- Estimated Savings
- Evaluated Savings
- Direction of Change



LED Lighting

Based on an electric billing analysis, net per-unit savings for LED lighting (18 kWh for the most installed bulb type) are lower than National Grid planned. The evaluation also found that installation rates are dropping; assessors are finding less inefficient lighting (incandescent and halogen bulbs) to replace with program LEDs. In fact, after representing 47% of total EWSF savings just three years ago, lighting made up just 25% in 2019.

33-38
kWh/year/
bulb

15-34
kWh/year/
bulb



Weatherization

The evaluation's billing analysis showed that participants who weatherized their homes saw lower-than-anticipated gross energy savings (96 therms/year vs. the 108 therms/year planning estimate). The evaluation found a net-to-gross ratio of 87%, indicating that most participants would not have weatherized their home if not for EWSF. Weatherization, particularly for oil heated homes, has become a larger contributor to overall program savings in recent years.

108
therms/
year/home

96
therms/
year/home



Key Process Findings

Process evaluation activities found that the program is performing at a high level. Participants expressed satisfaction with EWSF (91%), saying that they had a positive experience "from start to finish" and stakeholders appreciate how well the program is managed and delivered to customers. In-home assessments ran smoothly in 2019, as did virtual assessments, which the program rolled out in response to the COVID-19 outbreak. The effectiveness of virtual assessments compared to in-home assessments is still to be determined; however, stakeholders are optimistic that virtual assessments will have a long-term role in EWSF by providing National Grid an opportunity to customize the program to meet different customer needs. 95

Rhode Island Shelf Stocking Study

The report documents trends in the availability and shelf prices of multiple types of light bulb in National Grid's ENERGY STAR® Lighting Program partner stores. Stocking and pricing data were collected in the autumns of 2016-2019.

Sample Summary

2016-2019

53-55
stores 

49-64k
packages 

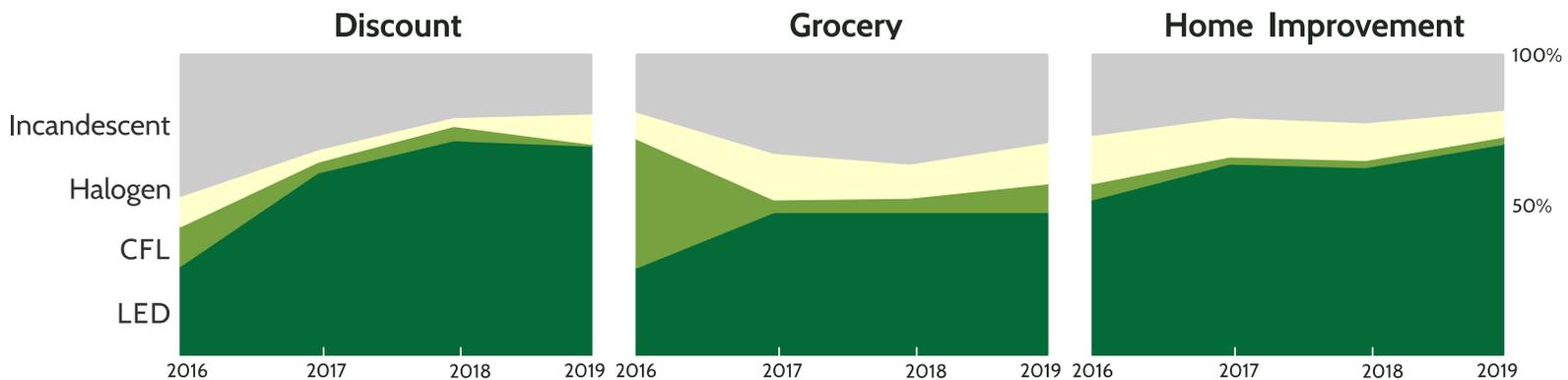
112-172k
bulbs 

2.2-3.6k
models 

Key Conclusions

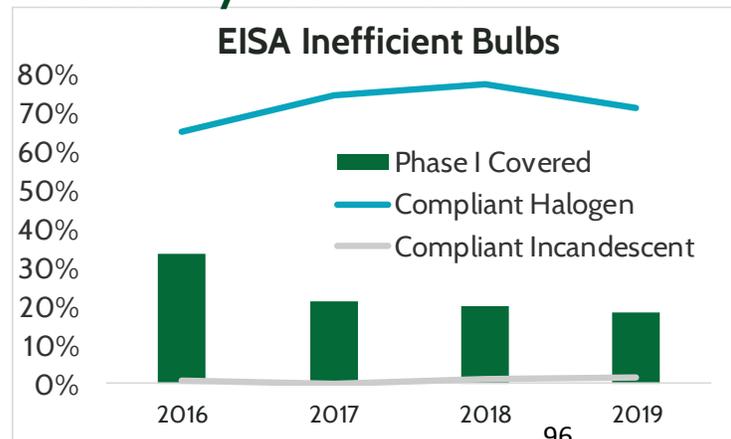
- The amount of space dedicated to light bulbs in general continues to decrease in most channels.
- Hardware, Drug and Grocery stores devote two-fifths of lighting space to inefficient bulbs.
- Program incentives and general market trends have reduced the LED prices consumers see on shelves by more than half at Hardware and Discount Stores since 2016.
- As LEDs displace older technologies, other program approaches may be required to help late-adopters switch to this more efficient technology.

Participant Stocking Practices



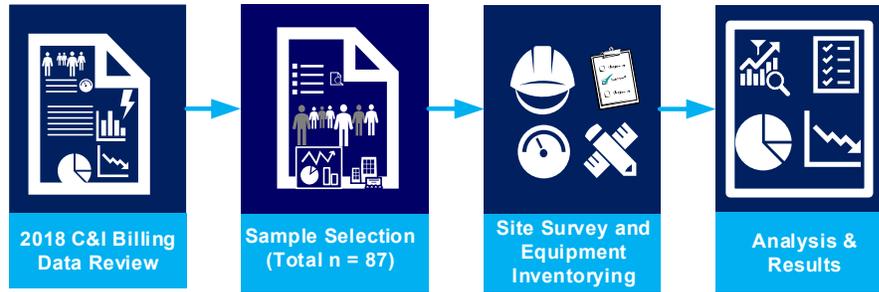
EISA: Energy Independence and Security Act of 2007

Congress set efficiency standards for general use lighting with EISA, which went into effect gradually between 2012 and 2014 (Phase I). The graph to the right shows that the availability of inefficient light bulbs subject to EISA standards (Phase I covered) have decreased over time. The majority of halogens on participating retailers' shelves since 2016 have been compliant with Phase I (Compliant Halogen).



DNV GL conducted the Rhode Island (RI) Commercial and Industrial (C&I) Market Characterization Data Collection Study to provide a clear understanding of the C&I building market in RI and assess the market share and sales trends for recently purchased high-efficiency equipment. The study gathered detailed on-site facility-level data on a wide range of energy-consuming building equipment. The DNV GL team recruited and visited 87 customers of different businesses types and sizes from across the state. Offices, Manufacturing/Industrial, and Retail facilities have major shares of electricity consumption in RI, therefore, bigger samples were surveyed: 17 Office, 17 Manufacturing/Industrial, and 10 Retail.

Methodology



Surveyed Business Types

Campuses	Manufacturing or Industrial
Education	Office
Food Sales	Other
Food Service	Public Assembly
Healthcare	Retail
Hospitals	Warehouse
Lodging	

Summary of final population frame

Business Size	% Consumption
Small: <500 MWh	31%
Medium: 500 - 4,500 MWh	36%
Large: >4,500 MWh	33%
TOTAL	100%
(27,508 C&I accounts)	(3,503,559 kWh)

End-use equipment surveyed

- Lighting & Controls
- Heating
- Cooling
- Domestic Hot Water
- Motors & Speed Drives
- On-Site Generation

Lighting Equipment Key Findings

7.6 million
Lamps operating in RI

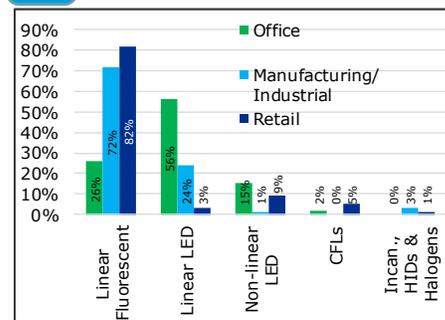
- 1.4M Linear LEDs
- 4.9M Linear Fluorescents
- 0.7M Non-linear LEDs
- 0.4M CFLs

Linear Lighting Program Participation



2/3

or 66% of linear lamps are fluorescent technologies, providing an opportunity to convert them to LEDs for more energy savings.



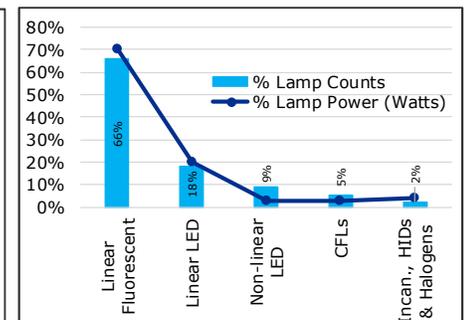
OPPORTUNITIES



Manufacturing/Industrial and Retail businesses have great opportunities (>70%) to install LEDs while office have about 26%.



RI has a lot of potential for savings from installing controls for lighting equipment, such as occupancy sensors, daylighting sensors, timers, and dimming. Nearly 90% of the interior lighting is controlled manually.



Non-Lighting Equipment Key Findings

153k Cooling systems:
61% were split or packaged air conditioners
28% were packaged terminal or window units
11% were heat pumps

79k Heating units:
39% were packaged furnaces
14% were hot water or steam boilers

23 businesses used on-site emergency generators
13 used natural gas as a fuel
 Other fuels included diesel and propane

52k



Domestic hot-water (DHW) heaters:
86% are Storage water heaters
13% are Instantaneous systems
1% use central plants/heat exchangers.
72% of the DHWs use non-electric fuels like natural gas, Propane, etc.

OPPORTUNITIES

- **66%** of the packaged AC and heat pumps were below federal standard efficiency.
- Nearly 21% of all heating systems are below federal efficiency standards

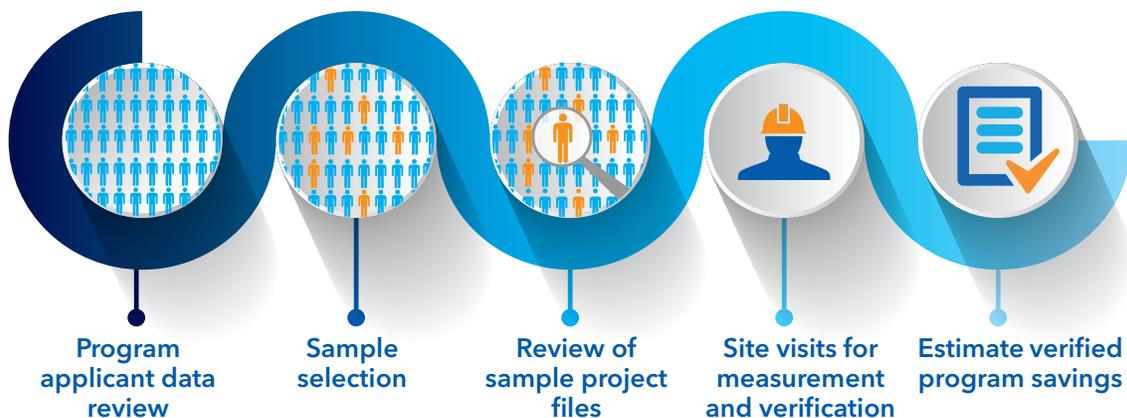
IMPACT EVALUATION OF C&I CUSTOM GAS INSTALLATIONS IN RHODE ISLAND

2018 program year

DNV GL quantified program offerings and natural gas savings for the custom gas savings projects completed by Rhode Island Commercial and Industrial (C&I) customers during the 2018 program year (PY). These projects generally use site-specific engineering analysis to generate savings. Custom gas measure realization rates in RI are calculated using a rolling-based sample starting with PY2016.

APPROACH

Rolling-based sample evaluations: In this approach the measurement and verification (M&V) is repeated annually as the previous year's tracking data becomes available. The overall program RR combines the latest 3-year results.



Key Terms

Realization rate (RR). Ratio between evaluated and tracking savings. If RR = 100%, then tracking estimated savings were verified and consistent with onsite findings.

Evaluated savings. Verified savings using post installation site information and/or data collection techniques.

Tracking savings. National Grid's reported savings for the approved natural gas savings projects.



KEY FINDINGS

5.41 million therms savings from the total 3-year rolling program

84% combined program realization rate

PY2016
RR 71%

PY2017
RR 92%

PY2018
RR 83%



268
Program participants
from 2016-2018



23
Participants evaluated
from 2016-2018



3 year
Rolling-based sample

RECOMMENDATIONS FROM SITE EVALUATIONS



- For EMS/control-based projects, verify pre- and post-equipment installation usage data and provide documentation to ensure controls are operational and achieving savings.
- Observe and examine post-commissioning and post-inspection process to find project close-out improvements for large projects to reduce administrative errors.

Installed measures

- Energy management systems
- Building shell upgrades
- Heating equipment
- Process equipment
- Steam traps
- Pipe insulation upgrades
- Boiler controls and more

Rhode Island 2020 Energy Efficiency Workforce Analysis Report

Introduction

In 2020, National Grid spent a combined \$112,665,924 on the Rhode Island programs that saved 157,346 annual megawatt hours (MWh) of electricity and 318,845 million British thermal units (MMBtu) of natural gas. These achievements were accomplished through the combined efforts of many workers in different roles based inside and outside of Rhode Island that provided services for National Grid and its customers.

Study Overview

The focus of the Energy Efficiency Workforce Analysis Report is to quantify the workforce that was involved in delivering National Grid’s Rhode Island programs in 2020. The workforce analysis reports the number of jobs associated with the programs and compares them to past years. The study also provides narrative context for those findings and observations.

Methodology

Guidehouse identified the number of full-time equivalent workers (or FTEs) by scaling 2019 FTE impacts by an indicator of program activity – the ratio of spending in 2020 to program spending in 2019. Manual adjustments were made to these calculations based on interviews with 7 National Grid staff and 19 program implementation or management vendors. An FTE is assumed to work 1,768 hours per year.

Key Findings

- 827.5 full-time equivalent (FTE) workers associated with National Grid spending in 2020 for Rhode Island gas and electric energy efficiency programs
- The number of FTEs decreased from 964.6 in 2019, because of decreased program spending
- The size of the workforce and how it did its work in 2020 were highly influenced by the COVID pandemic
- FTEs reported are for the end of 2020 and capture only enduring changes in FTEs, not temporary layoffs or furloughs

Summary of 2020 FTEs by Market Sector

Electric Programs

Commercial and Industrial	203.7
Residential Income Eligible	59.1
Residential Non-Income Eligible	263.7

Gas Programs

Commercial and Industrial	19.8
Residential Income Eligible	38.5
Residential Non-Income Eligible	189.2

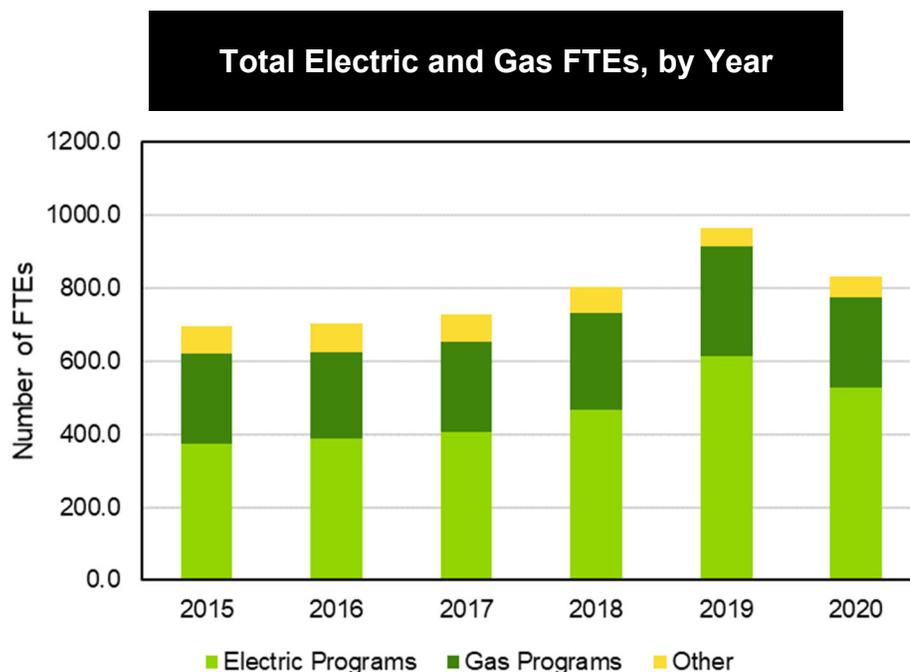
Other

National Grid Staff	44.4
Marketing	9.0
COVID-19 Training	0.3

Total	827.5
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Key Findings, continued

- As the pandemic persists, vendors and the workforce continue to adapt to the limitations on customer interactions while still responding to a sustained demand for energy efficiency
- In a counterfactual analysis, if not for the pandemic, the number of FTEs would have increased about 2% relative to 2019, to 986.2 FTE
- The interviews indicated that there were no reported cases of COVID transmission due to interactions between program implementers and customers



Recommendations for National Grid

- The scaling methodology with manual adjustments used for this study is appropriate where there are not major program variations from year to year; it may therefore be appropriate for the workforce analysis study in future years.
- Vendors were appreciative of National Grid’s communications during program disruptions due to the pandemic; vendors noted that the workforce can respond best to program changes and evolution with as much advanced notice as possible.
- As the workforce gets older and transitions, there is an opportunity for new entrants to the workforce to develop a new skill set. Vendors noted a shift away from non-network lighting measures and a need for more mechanical contractors. National Grid could support this with training or educational resources.

Attachment 4
Year-End Participation Memo

2020 Year-End Participation Memo

I. Participation Overview

National Grid recognizes the importance of program participation in designing efficiency services, reaching diverse markets, meeting customer demand, and finding all efficiency opportunities. Complementary to the gas and electric savings that the Company seeks to achieve each year, participation contextualizes the impact of efficiency. It reveals who is benefiting from the programs and how. The objective of this memo is to measure unique participants, participation over time, and total customers reached over time.

The Company offers several types of services that enable customers to participate in a variety of ways and this complicates how to measure participation. Programs and initiatives such as EnergyWise and EnergySmart Grocer (ESG) retrofit a home or business in a deep way which may include a technical assessment and multiple measures are installed. The Company also delivers efficiency to a large number of customers through broad channels that make efficient products accessible to customers. These broad efforts tend to focus on one measure at a time and are intended to transform the market so that customers make energy efficient choices. Examples include the ENERGY STAR® Lighting program and the Commercial and Industrial (C&I) Upstream Lighting initiative. For these broad offerings, it is difficult to precisely measure participation levels cumulatively and compare to participation in other deeper programs. Therefore, this memo focuses on participation levels in deep services that offer customers the most benefits.

Programs and initiatives are designed and delivered in very specific ways in order to maximize their potential to achieve energy savings. Therefore, specific data differs among programs and what is defined as a ‘participant’ may differ as well. A breakdown of participation units used for reporting gas and electric programs in 2020 is found below. The participation numbers found in Tables E-1 and G-1 in Attachments 5 and 6, respectively, of Docket 4979 - Annual Energy Efficiency Plan for 2020, filed with the Commission on October 15, 2019, are in these units.

Participation Reporting Units

Fuel	Sector	Program	Participation Unit
Gas	Commercial & Industrial	Large Commercial New Construction	Unique Account
		Large Commercial Retrofit	Unique Account
		Small Business Direct Install	Unique Account
		C&I Multifamily	Housing Units
	Income Eligible Residential	Single Family – Income Eligible Services	Unique Account
		Income Eligible Multifamily	Housing Units
	Residential	Energy Star® HVAC	Unique Account

		EnergyWise	Unique Account
		EnergyWise Multifamily	Housing Units
		Home Energy Reports	Unique Account
		Residential New Construction	Housing Units
Electric	Commercial & Industrial	Large Commercial New Construction	Unique Account
		Large Commercial Retrofit	Unique Account + Unique Customer names from Upstream Lighting
		Small Business Direct Install	Unique Account
	Income Eligible Residential	Single Family – Income Eligible Services	Unique Account
		Income Eligible Multifamily	Housing Units
	Residential	Energy Star® HVAC	Unique Account
		EnergyWise	Unique Account
		EnergyWise Multifamily	Housing Units
		Home Energy Reports	Unique Account
		Residential New Construction	Housing Units
ENERGY STAR® Lighting		Estimated Housing Units	
ENERGY STAR® Products	Number of Rebates		

As the table shows, participation is counted in different ways depending on the program.

1. Unique billing accounts: The predominate means for tracking participants. This is defined as one electric or gas account number.
2. Housing units: This method is used in the electric and gas Residential New Construction program and multifamily programs. For New Construction programs, buildings are typically under construction, so accounts do not yet exist. National Grid, therefore, tracks the number of housing units for participation. This method is also applied to all multifamily programs, where complexes and not individual apartments tend to have accounts. These programs are focused on the impact to the apartment dwellers, so from a program design perspective, understanding the number of housing units affected, is of greater interest. Please note that for the gas programs only gas-heated units are counted as participants. In the case that an electric or delivered-fuel-heated dwelling is part of the impacted complex, it would not be counted as a participant.
3. Rebates: In the ENERGY STAR® Products program, the Company reports the number of rebates processed because not every rebate contains account information.
4. Estimated bulbs per home: Within the ENERGY STAR® Lighting program, retailers do not disclose information identifying their customers, thereby precluding the connection of bulb purchases to

utility accounts. The number of bulbs, therefore, is translated into an estimate of participants based on purchasing pattern research¹.

5. Unique customer names: This method is used in the C&I Upstream Lighting Initiative. Customer account information is not collected at the point of sale as it would delay the process and can be a potential barrier to the success of the program. Therefore, the Company must analyze unique customer names and addresses to determine unique participants.

II. Unique Cumulative Participation

Objective

The integration of efficiency services, from the identification of HVAC opportunities during home audits to product offerings through the Home Energy Reports web portal, means that a single customer may be counted as a participant in multiple programs. Continued interest in efficiency, moreover, may lead that customer to participate in consecutive years. Such overlap in participation, both over time and across programs, has become important to National Grid and its stakeholders as it is important in understanding the progress that energy efficiency programs have made in benefitting Rhode Island electric and gas customers.

Methodology

The tables and graphs below show the unique annual and cumulative customer accounts associated with certain efficiency programs, sector, and fuel for the period 2012-2020. The tables are organized using the following:

- Annual Program Counts
 - Represents the unique accounts associated with an individual program in a given year. It removes all double counting within a given program within a given year. For example, if a customer participated in the HVAC program twice in 2016, they would only be counted once.
 - Please note that some overlap exists within the home audit programs, but not because of repeat audits. Program policy requires customers wait three years before receiving another audit. However, follow-up work to an audit in 2013, such as weatherization, could occur in 2014. One account, therefore, would appear as a unique participant in two different years.
 - For the Company's 2012 and 2013 Year End Reports, the program participation counts did not remove this double counting. The program participation counts for 2012 and 2013 below, therefore, may differ from how they were reported in the 2012 and 2013 Year End Reports.

¹ 2016-2018 Massachusetts Joint Statewide Three Year Electric and Gas Energy Efficiency Plan. Appendix J. Participant Definitions: Residential Lighting Assumptions

- Additive
 - The sum of Annual Program Counts.
- Cumulative
 - Eliminates all double counting within a program across multiple years. For example, if a customer participated in the HVAC program in 2013 and then again in 2016, they would only be counted once. Therefore, the cumulative count may be less than the additive count since it removes customers that participate in the same program more than once.
- Sector (Residential, Income Eligible, and Commercial) Subtotals
 - Eliminates all double counting across programs for a given year. For example, if a customer participated in the HVAC program and the EnergyWise program in 2020, they would only be counted once. Therefore, the sector subtotal may be less than the sum of all the annual program counts in a given year.
- Portfolio Total
 - Eliminates all double counting across sectors for a given year. For example, if a customer participated in the Income Eligible Single-Family Program and also the ENERGY STAR® Products program in 2020, they would only be counted once. Therefore, the portfolio total may be less than the sum of all annual participant counts.
- Percent Unique Accounts:
 - This represents the ratio of cumulative to additive program participation counts. The result is the percentage of customers that only participated in a given program one time from 2012-2020.
- Percent Unique Program Participants:
 - This represents the ratio of the sector subtotal (unique counts) to the sum of annual participant counts in a given year. The result is the percentage of customers that only participated in one program during a given year.
- Portfolio Cumulative
 - The set of unique accounts across all programs and years, with all overlap removed. For example, if an account is found in EnergyWise for 2013 and ENERGY STAR® Products for 2014, it would only appear once in the Portfolio Cumulative Count.
- Important Exclusions
 - The counts shown below do not include participants in Home Energy Reports, ENERGY STAR® Lighting, and C&I Upstream Lighting (an initiative tracked under Commercial New Construction before 2016 and under Commercial Retrofit starting in 2016). While Home Energy Reports is an important program that reaches broad participation and savings

while driving customers to other program opportunities, it was excluded because its hundreds of thousands of participants would overwhelm the cumulative counts, thereby obscuring any trends that could otherwise be observed. Neither ENERGY STAR® Lighting nor Commercial Upstream Lighting collects account information so neither could be included in this analysis. The electric and gas participants for these programs, however, are included in tables E-1 and G-1 in Attachments 1 and 2 respectively.

- Not all rebates processed through the ENERGY STAR® Products contain account information. Therefore, rebates without account information are not included in this analysis. For this reason, annual program counts below are lower than the total number of customers that participated in this program. For example, in 2016, 25,171 rebates were processed through the program compared to 2,622 participants shown below. Likewise, the number of rebates in the ENERGY STAR® Products program reported in E-1 will be higher than the number of accounts detailed below because not all rebates include account information.
- In the year-end report, the Company counts EnergyWise Multifamily and EnergyWise Multifamily Income Eligible participation by units in treated buildings. When units are used, if 51% of the building is income-eligible, the whole building and all units within are treated and counted as income eligible. However, since this analysis uses account numbers, and account numbers track with a rate class, the results below will show a higher split of market rate to income eligible multifamily participants. Multifamily programs are included in this unique account analysis to remove overlaps with other programs to the best extent possible.
- 2012 was chosen as the baseline year because it represents the first year of 2012-2014 Three Year Plan.

Trends in EE Program Participation

The tables and figures below provide insight into participation trends across programs and years. Overall, 2020 program participation at the portfolio level saw decreases compared to 2019 participation, with the electric portfolio showing an 10% decrease and the gas portfolio showing a 32% decrease, with this decrease being seen across the board, mostly due to the COVID-19 pandemic.. The program-specific observations on participation trends from 2019 and 2020 are highlighted below.

Residential electric HVAC participation saw an increase from 2019 to 2020 with electric participation growing by 7%. This was the only residential program to see increased participation. Growth from 2019 to 2020 was primarily driven by increased use of such measures as WIFI thermostats, the replacement of electric resistance heating systems with air source heat pumps for use as a primary heating source and heat pump water heaters >55 gallons.

- Compared to 2019, for single family programs, EnergyWise participation decreased by 14% for electric and 37% for gas and Income Eligible Services participation decreased by 6% for electric and 53% for gas. On March 17, 2020, out of an abundance of safety and caution and concern for the health and well-being of the Company's vendors and customers, the Company made the decision to temporarily suspend the contracted vendor delivery of on-site energy efficiency

services to residential and commercial customers. While virtual home energy assessments were developed and offered to customers beginning in early April, the temporary stop of in-home visits had a negative impact on participation.

- For multifamily programs, EnergyWise participation decreased by approximately 20% for electric and 41% for the gas program. This was less of a decrease on the electric side than had been seen from 2018 to 2019, where participation decreased 26%. Income eligible multifamily participation decreased by 26% for electric and 65% for gas. Similar to other on-site energy efficiency programs, all on-premise work was suspended in mid-March due to the pandemic. The multifamily vendor RISE worked closely with the vendors and National Grid staff to develop a plan for how to safely resume on-premise work, allowing on-premise activity to resume near the end of the second quarter in mid-June.
- For C&I programs, new construction participation declined by approximately 32% for electric and increased slightly by 6% for gas, while participation for the retrofit program decreased by 5% for electric and 61% for gas. The C&I retrofit gas participation also includes the C&I multifamily program. The increase in the large new construction gas program over the past year has been driven by increased upstream participation. The decrease in the large new construction electric program over the past year was partly driven by a decline in fewer lighting accounts served year over year.
- Overall, the Company reached approximately 209,818 electric customers and 77,180 gas customers from 2012 to 2020. This figure is reflective of the “Important Exclusions” section above.

Examining the percentage of unique program participants in a single year, it is evident that there is little overlap between programs. This trend is seen across all three sectors (C&I, Income Eligible, Residential). These results are not surprising in the Income-Eligible Sector where customers would either participate in the single family or multifamily program, nor are they in the C&I sector where programs are more segmented. However, in the residential sector, customers are encouraged to participate in multiple programs in any given year. These results indicate there may be more the Company can do in terms of cross-program promotion to drive more participation in the same year.

In 2020, National Grid launched new robust, comprehensive marketing campaigns, which drove awareness, interest and participation in the Company’s Energy Efficiency programs. These omni-channel marketing efforts were reflective of the COVID-19 pandemic; messaging focused on affordability, safety and energy saving solutions for customers. Our communication efforts reinforced the financial & energy saving benefits of making upgrades with no-cost virtual assessments, low-cost energy efficient products, and rebates through our energy saving programs. Sentiment and tone were empathetic and helpful as our customers dealt with a new reality.

The multifamily program-level trends are not likely representative due to the fact that the Company generally counts all units in a participating facility. In Spring 2016, the Company started tracking

participating units in addition to counting all units in a multi-family facility. Section III of this memo provides details on units served through the multifamily programs.²

² The Company continues to examine multifamily program-level trends, participation and methodology to determine if any adjustments to multifamily program counts are necessary.

Table 1. Electric Cumulative Participation 2012-2020

Participation by Accounts

Sector	Program	Annual Counts									Additive	Cumulative	% Unique Accounts
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2012-2020	2012-2020	
Residential	HVAC	1,414	3,049	2,445	2,091	1,978	3,023	3,269	6,298	6,745	30,312	27,992	92%
	Products	9,520	6,254	6,922	4,461	2,622	6,630	6,249	7,283	6,843	56,784	51,135	90%
	EW	6,760	8,645	9,898	11,665	9,567	10,159	11,961	13,839	11,926	94,420	79,882	85%
	EW MF	2,626	3,531	5,277	8,014	11,408	7,472	10,014	7,455	5,986	61,783	38,049	62%
	Residential Subtotal	19,729	20,774	23,776	25,561	25,103	26,368	30,551	33,077	29,883	234,822	170,630	73%
	% Unique Program Participants	97%	97%	97%	97%	98%	97%	97%	97%	95%	95%		
Income Eligible	AMP	2,654	2,646	3,054	2,851	3,016	3,074	3,850	4,089	3,863	29,097	22,077	76%
	IE MF	1,410	2,010	3,104	1,383	1,999	2,289	1,256	1,433	1,065	15,949	10,736	67%
	Income Eligible Subtotal	4,062	4,656	6,158	4,234	5,015	5,359	5,103	5,520	4,928	45,035	32,742	73%
	% Unique Program Participants	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Commercial	New Construction	162	167	169	236	251	195	173	155	105	1,613	1,264	78%
	Retrofit	405	350	432	459	400	593	579	545	519	4,282	2,736	64%
	SBS	1,282	1,175	960	1,049	797	807	760	724	615	8,169	6,836	84%
	Commercial Subtotal	1,808	1,651	1,513	1,682	1,380	1,554	1,492	1,424	1,239	13,743	9,974	73%
	% Unique Program Participants	98%	98%	97%	96%	95%	97%	99%	100%	100%			
Portfolio Total		25,545	27,032	31,307	31,448	31,449	33,177	36,995	39,825	35,939	292,717	209,818	72%

Table 2. Gas Cumulative Participation 2012-2020

Participation by Accounts

Sector	Program	Annual Counts									Additive	Cumulative	% Unique Accounts
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2012-2020	2012-2020	
Residential	HVAC	6,383	4,865	3,037	1,980	1,652	2,949	3,113	3,846	3,282	31,107	28,689	92%
	EW	1,413	1,946	2,737	2,830	3,252	3,387	4,329	5,209	3,304	28,407	25,627	90%
	EW MF	1,792	762	3,146	4,291	5,394	4,332	4,394	4,391	2,578	31,080	17,606	57%
	Residential Subtotal	9,338	7,352	8,662	8,909	10,112	10,413	11,594	13,138	8,971	88,489	66,395	75%
	% Unique Program Participants	97%	97%	97%	98%	98%	98%	98%	98%	98%			
Income Eligible	AMP	388	398	539	529	722	700	615	596	279	4,766	4,459	94%
	IE MF	48	261	531	532	1,121	282	486	324	114	3,699	2,836	77%
	Income Eligible Subtotal	436	659	1,070	1,061	1,841	982	1,101	920	393	8,463	7,292	86%
	% Unique Program Participants	100%	100%	100%	100%	100%	100%	100%	100%	100%			
Commercial	New Construction	112	161	115	134	206	268	309	321	341	1,967	1,098	56%
	Retrofit	431	476	159	656	611	240	206	311	120	3,210	2,735	85%
	SBS	160	111	297	121	50	122	82	109	85	1,137	1,093	96%
	Commercial Subtotal	678	725	549	892	852	614	575	719	536	6,140	5,041	82%
	% Unique Program Participants	96%	97%	96%	98%	98%	97%	96%	97%	98%			
Portfolio Total		10,437	8,728	10,271	10,462	12,406	11,950	13,274	14,582	9,889	101,999	77,180	76%

Figure 1. Electric and Gas Participation by Sector, 2012-2020

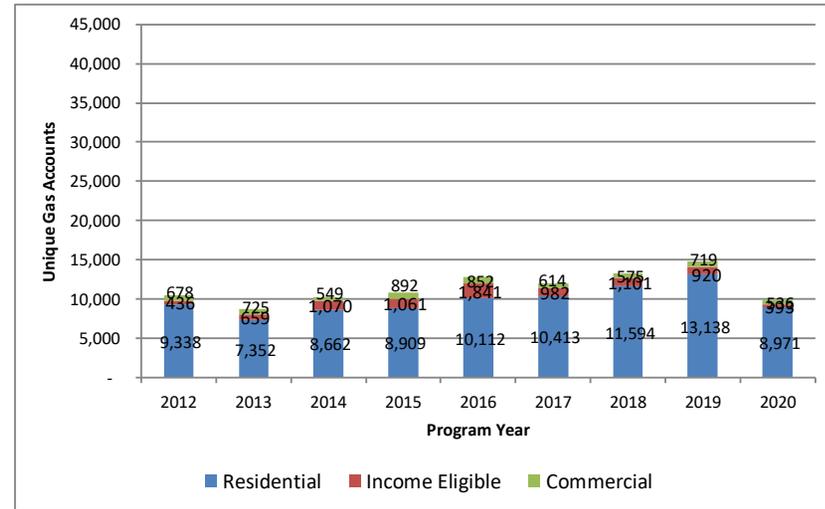
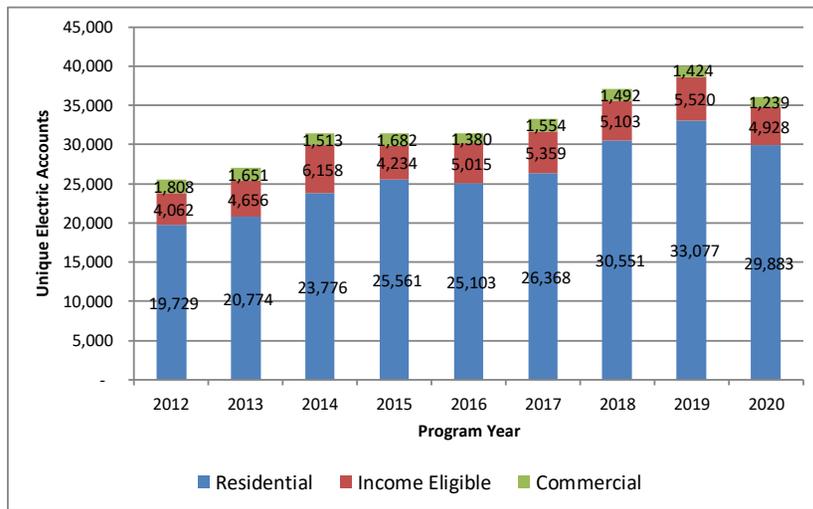


Figure 2. Electric and Gas Participation, Residential Sector by Program, 2012-2020

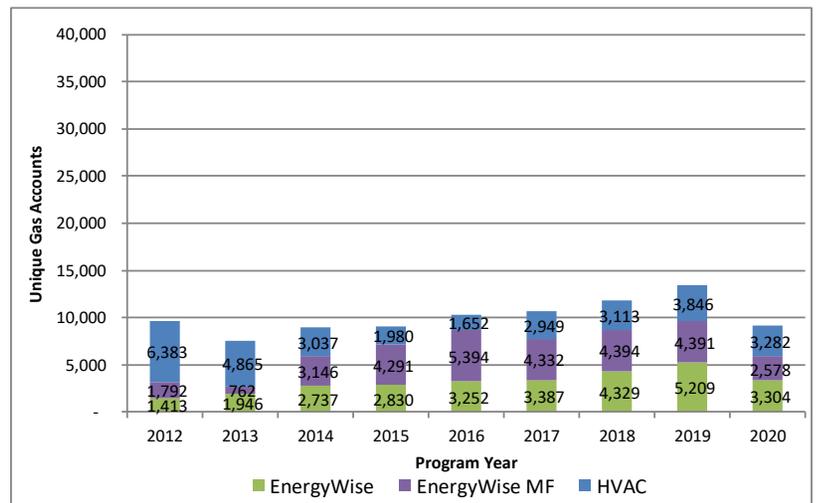
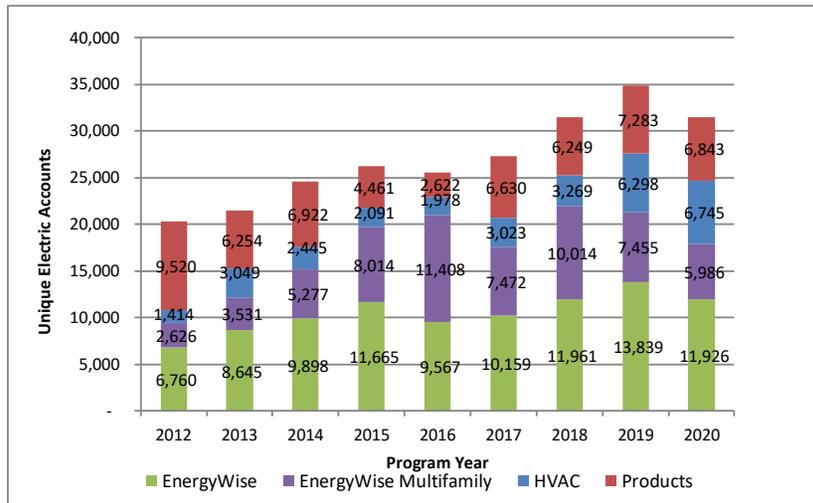


Figure 3. Electric and Gas Participation, Income-Eligible Sector by Program, 2012-2020

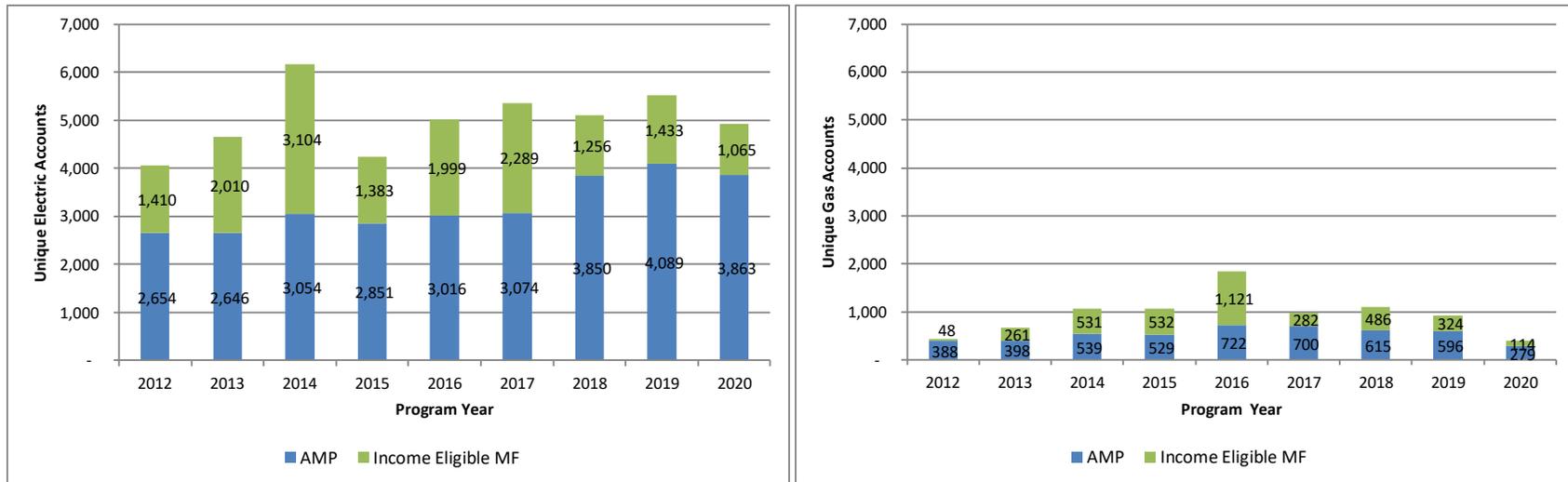
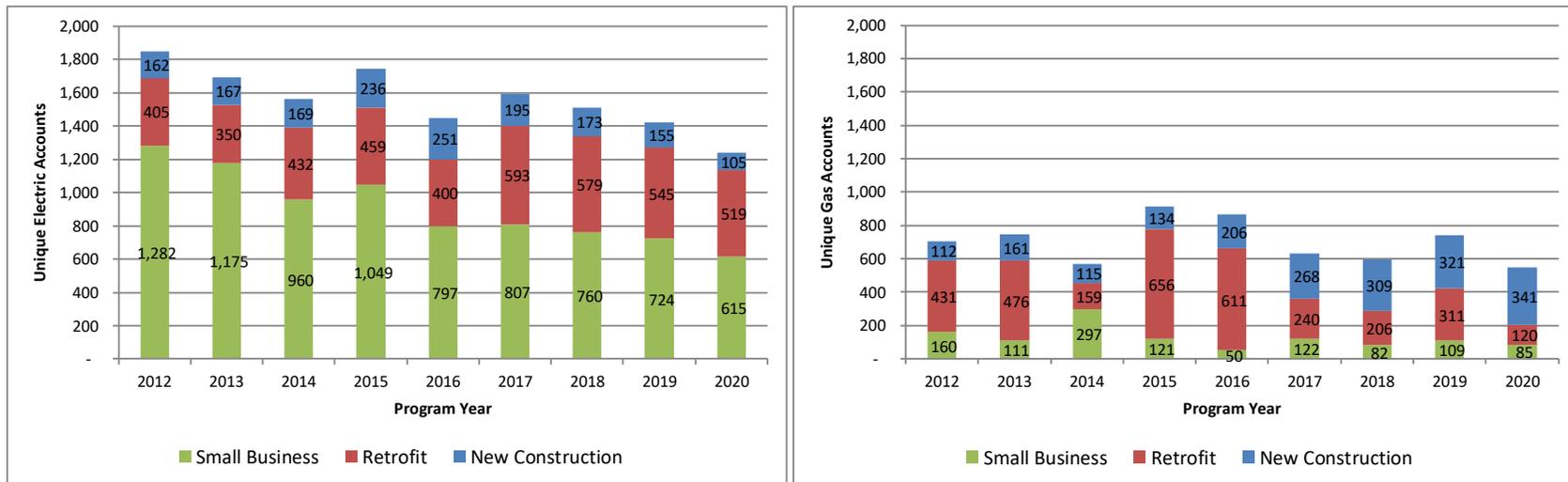


Figure 4. Electric and Gas Participation, Commercial Sector by Program, 2012-2020



III. Housing Units

The annual housing units are defined as unique in the same sense as billing accounts. Housing units are presented below for the Electric and Gas EnergyWise Multifamily program, Electric and Gas Income Eligible Multifamily program, the Commercial and Industrial (C&I) Multifamily Gas program, and the Electric and Gas Residential New Construction Program.

In multifamily programs, the unique number of account shown in the previous section (Tables 1 and 2) do not fully represent the participation trend for these programs. That is because not all individual units have separate accounts as a building might be master metered. Therefore, in Table E-1 and G-1 of the year-end report, the Company counts all housing units in treated buildings for participation, which is also shown below. Please note that multifamily housing units cannot be shown as cumulative because the Company does not have specific unit data within a treated facility and therefore cannot remove overlap between years.

Participation in the Residential New Construction program is also defined by housing units since accounts do not yet exist. In this program, housing units are only reported once, at the time of completion, so there is no overlap between units across multiple years. Therefore, the Company can show this program in terms of cumulative unique participation.

Table 3. Electric Participation by Housing Units

Program	Annual Housing Units*									Additive
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2012-2020
EnergyWise MF	2,660	3,539	5,322	7,710	7,783	3,557	2,415	2,971	3,270	39,227
Income Eligible MF	3,878	5,370	5,977	4,610	5,366	5,162	3,875	2,140	972	37,350
RNC	406	473	573	442	526	680	458	639	482	4,679
Portfolio Total	6,944	9,382	11,872	12,762	13,675	9,399	6,748	5,750	4,724	81,256

*For multifamily programs, 2016 - 2020 counted only participating housing units in participating facilities while 2012-2015 counted all housing units in a participating facility.

Table 4. Gas Participation by Housing Units

Program	Annual Housing Units*									Additive
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2012-2020
C&I MF	-	1,066	939	2,345	2,982	1,997	954	1,530	44	11,857
EnergyWise MF	1,569	984	2,496	3,147	2,232	3,984	1,811	1,008	308	17,539
Income Eligible MF	977	2,773	3,090	3,956	4,701	3,840	3,010	2,089	1,716	26,152
RNC	252	425	500	366	341	353	249	240	131	2,857
Portfolio Total	2,798	5,248	7,025	9,814	10,256	10,174	6,024	4,867	2,199	58,405

* For multifamily programs, 2016 - 2020 counted only participating housing units in participating facilities while 2012-2015 counted all housing units in a participating facility.

IV. Estimate of Customers Reached 2012-2020

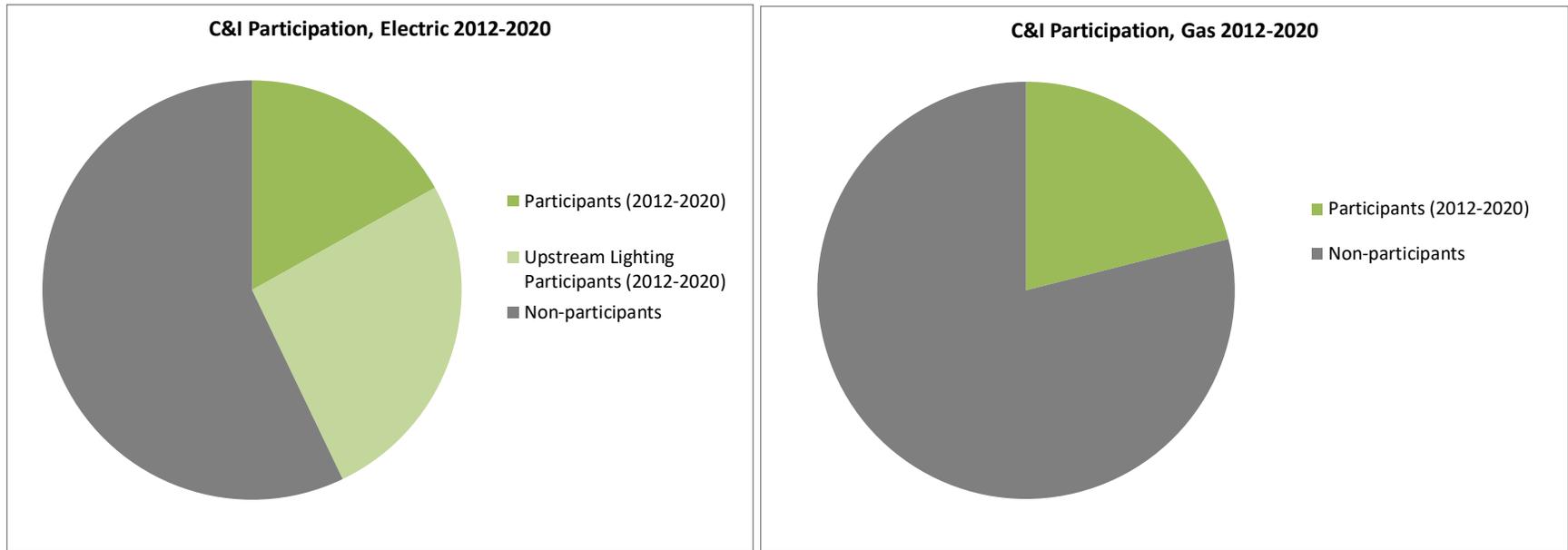
This section estimates the portion of each customer class that has participated in an energy efficiency program from 2012-2020. Figures 5 to 8 represent a visual estimate of the combination of unique participant counts from 2012-2020, plus residential new construction units, Home Energy Reports, and C&I upstream lighting. ENERGY STAR® Lighting participants are excluded from the counts because the program's broad participation among a large number of customers would overwhelm the data, making it difficult to analyze participation in other programs. Purchasing pattern research indicates that an estimated 328,940 participants purchased efficient bulbs through the program in 2020 alone. Similarly, C&I upstream lighting is also excluded from the unique participation count since the Company does not have detailed information and cannot remove overlap with other C&I programs. The Company does have customer information to remove overlap across years and includes an estimate of unique C&I upstream lighting participants in the graphs below.

The graphs show that from 2012 through 2020, 60% of electric customers and 31% of gas customers participated in National Grid's energy efficiency programs at least once. This is significant when one considers this analysis does not include data back to 2009, when energy efficiency programs under the construct of Least Cost Procurement began and does not include ENERGY STAR® Lighting or Home Energy Reports. Had this data been included, the penetration rates would undoubtedly be higher.

When Home Energy Reports and C&I upstream lighting participation is added to these counts, a total of 90% of electric customers and 91% of gas customers participated over this period. Home Energy Reports are included here because the program offers significant savings and benefits to customers as well as drives customers to participate in other energy efficiency programs.

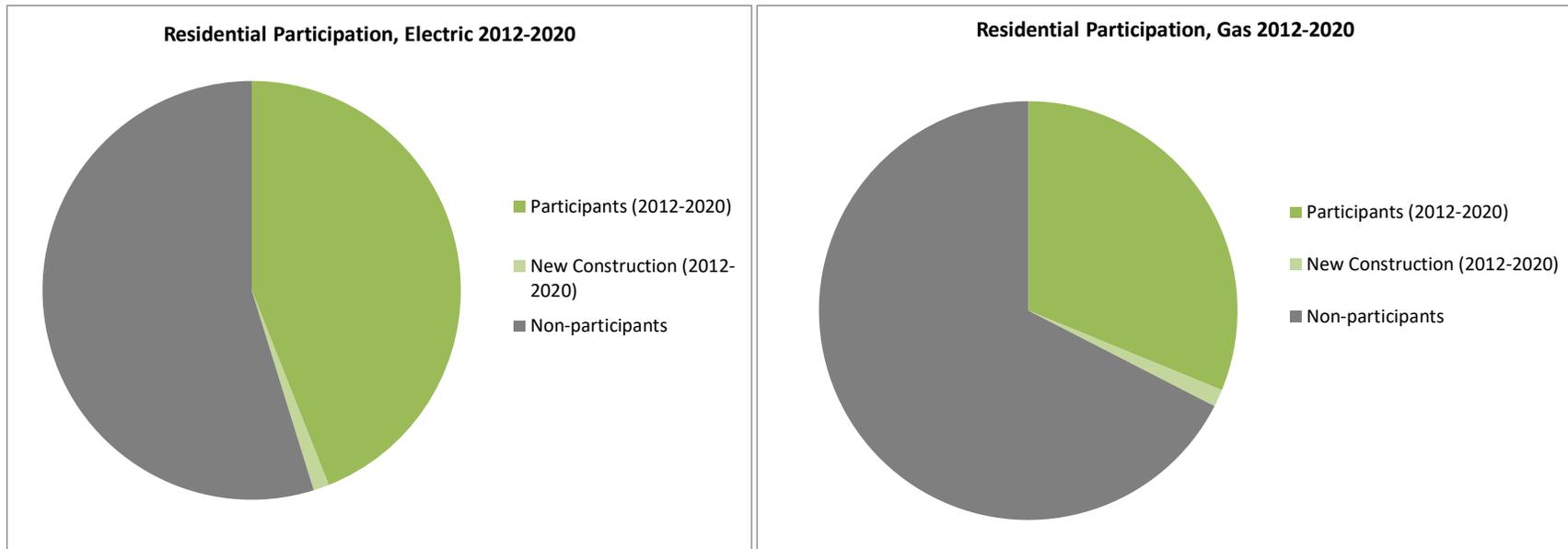
The Company will continue to conduct this analysis each year to help provide more visibility around participation levels to help gain insight into programmatic changes and improvements to reach even more customers in the future.

Figure 5. Commercial and Industrial (C&I)



*While cumulative counts remove overlap between years (2012-2020), it is not possible to remove overlap between upstream lighting and other C&I programs. Therefore, there may be customers in the upstream count that are also captured in the unique participation counts for 2012-2020.

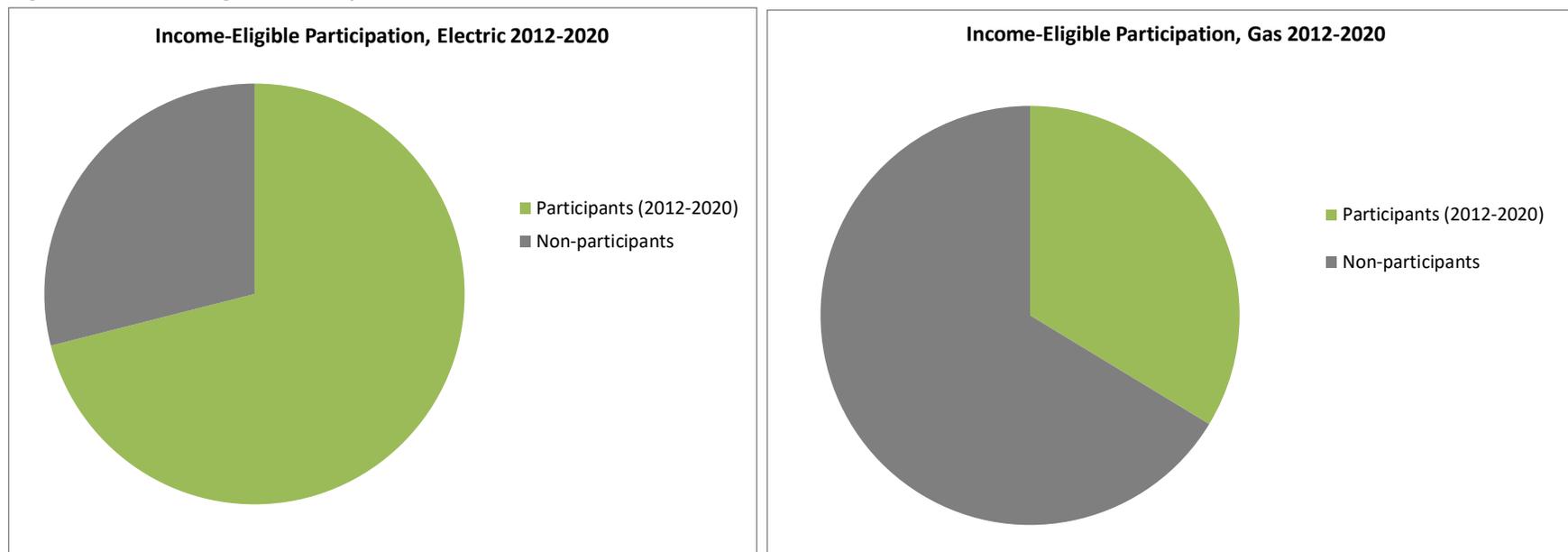
Figure 6. Residential Participation



*Does not include ENERGY STAR® Lighting and Home Energy Reports

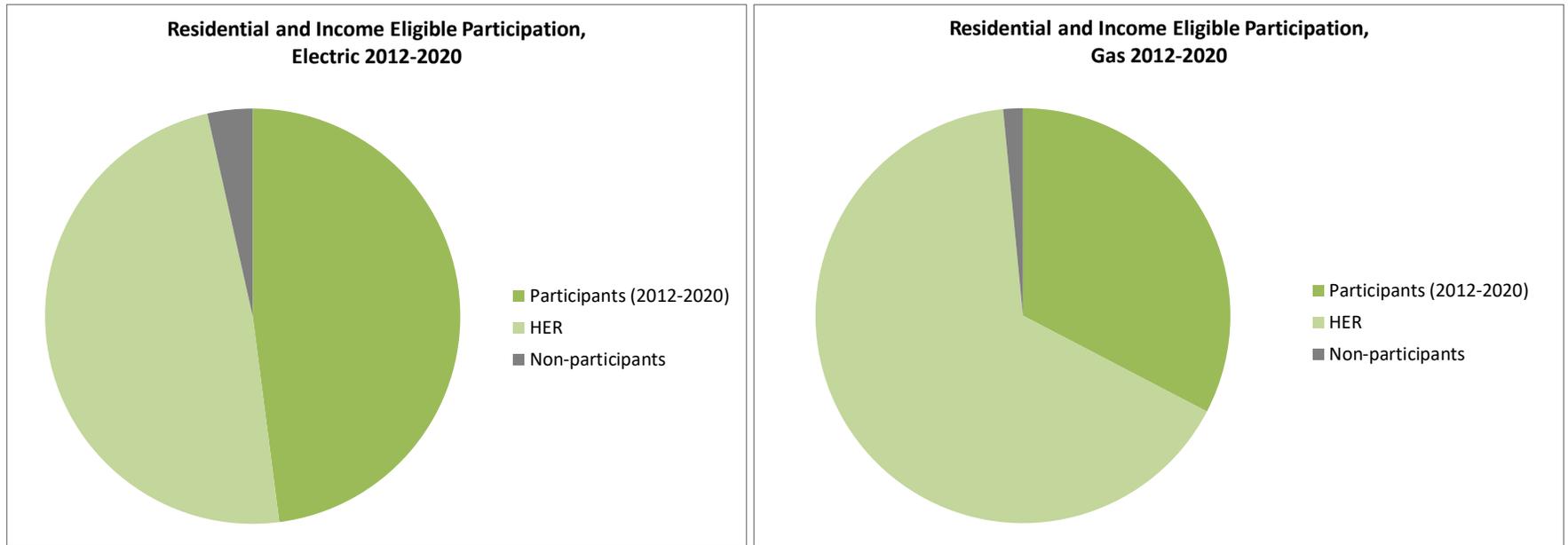
**Does not include ENERGY STAR® Products Program rebates that did not contain detailed level information

Figure 7. Income Eligible Participation



*While the Company counts Home Energy Reports, ENERGY STAR® Products, and ENERGY STAR® HVAC participation in the market rate residential sector, it's important to note that Income Eligible customers also participate in these programs as well as in the ENERGY STAR® Lighting program. Therefore, the above graphs likely under-represent the total number of Income Eligible customers served.

Figure 8. All Residential and Income Eligible Services including Home Energy Reports Program



*Home Energy Report participation has been reduced to account for estimated cross participation with other programs based on 2017 evaluation results³.

³ Rhode Island Home Energy report Program Impact and Process Evaluation. Illume Advising. 2017.

Attachment 5

Rhode Island 2020 Energy Efficiency Workforce Analysis Final Report



Rhode Island 2020 Energy Efficiency Workforce Analysis Report

Prepared for:

nationalgrid

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Disclaimer

This report was prepared by Guidehouse Inc (“Guidehouse”) for National Grid. The work presented in this report represents Guidehouse’s professional judgment based on the information available at the time this report was prepared. Guidehouse is not responsible for the reader’s use of, or reliance upon, the report, nor any decisions based on the report. **GUIDEHOUSE MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESSED OR IMPLIED.** Readers of the report are advised that they assume all liabilities incurred by them, or third parties, as a result of their reliance on the report, or the data, information, findings and opinions contained in the report.

Acknowledgement

For the six years prior to 2019 (i.e., 2013 – 2018), Peregrine Energy Group had performed the FTE analysis and composed the reports associated. Sections of this report have been adapted from the 2018 study: “Analysis and Recommendations regarding the Current and Future Workforce Associated with 2018 Rhode Island Energy Efficiency Programs”¹ completed by Peregrine. The use of text is done with permission from Peregrine and National Grid. Specifically, portions of the Executive Summary, Introduction, The Energy Efficiency Workforce, Providers and Employees Analysis sections were adapted from the 2018 study for this report. Additionally, as described in more detail throughout the report, the 2020 FTE analysis relied on scaling the 2019 FTE count, which was scaled based on the 2018 FTE count done by Peregrine Energy Group. The detailed description of the 2018 methodology in Attachment A was reproduced from the 2018 report. This meant that the 2018 methodology was embedded within Guidehouse’s 2020 counts. When describing this embedded methodology, wording from the 2018 report was used. Where sections from the 2018 study have been adapted, a footnote after the header makes this explicit.

¹ 2018 Study: “Analysis and Recommendations regarding the Current and Future Workforce Associated with 2018 Rhode Island Energy Efficiency Programs,” accessed at <http://rieermc.ri.gov/wp-content/uploads/2020/07/2018-attachment-5-workforce-report-final.pdf>.

Executive Summary

National Grid engaged Guidehouse to estimate the workforce associated with implementation of National Grid Rhode Island's electric and gas energy efficiency programs delivered in 2020. This study addresses the requirements of General Law 39-2-1.2, enacted by the Rhode Island General Assembly in 2012. In 2020, National Grid spent a combined \$112,665,924 on the Rhode Island programs that saved 157,346 annual megawatt hours (MWh) of electricity² and 318,845 million British thermal units (MMBtu) of natural gas. The measures installed during 2020 will save Rhode Island customers 1,299,159 MWh and 2,960,120 MMBtu over the lifetime of the measures.

The focus of this study is to quantify the workforce that was involved in delivering National Grid's Rhode Island programs in 2020. The workforce analysis reports the number of jobs associated with the programs and compares them to past years. Guidehouse calculated 827.5 full-time equivalent (FTE) workers associated with National Grid spending in 2020 for Rhode Island programs.³ Since an FTE employee often represents the combined labors of more than one person over the course of a year, the number of individual workers exceeds the number of FTEs by a significant amount. At a high level, spending for energy efficiency programs in Rhode Island decreased from 2019 to 2020, leading to decreased activity and therefore a decrease in FTEs among the associated workforce.

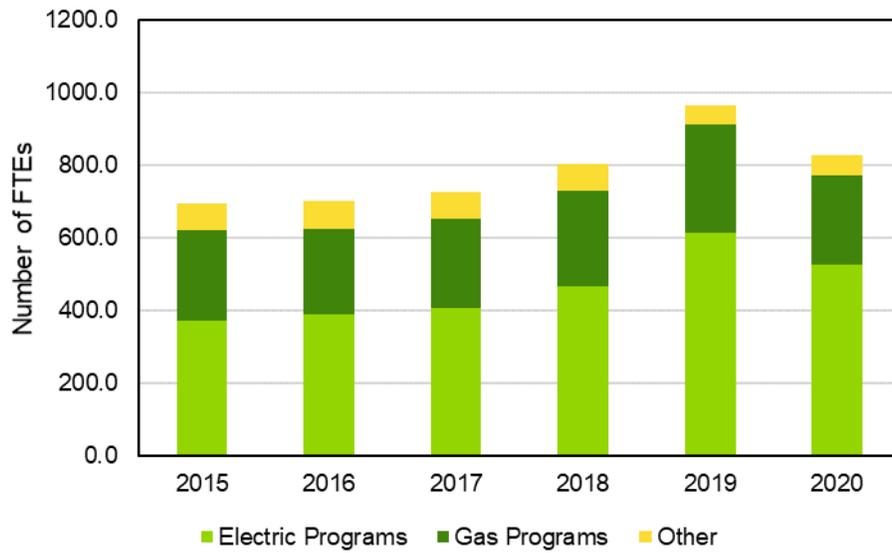
Guidehouse's basic approach for determining 2020 FTEs was to scale 2019 FTEs by program spending in 2020 relative to 2019. Where sufficient information was available, Guidehouse made manual adjustments to this calculation. As a result, there was a less significant decrease in FTEs observed across residential programs when compared to commercial programs. This was because more manual adjustments (based on vendor interview findings) were done to the residential program FTEs. By nature, the commercial programs have a larger number of vendors associated with them. Therefore, for the commercial programs, the vendor interviews represent a small sample of the workforce, instead of encompassing the a large fraction of the workforce associated with a program, which is the case for some of the residential programs. Though Guidehouse did not have the opportunity to interview all of the commercial program vendors, which made completing manual adjustments to FTEs difficult, interview findings from the sample of commercial vendors that were interviewed supported the trends observed by scaling program FTEs based on spending.

An overview of the quantitative FTE findings of this report are shown by sector in Figure 1-1 and Table 1-1. Figure 1-1 and Figure 1-2 show the trends of FTE jobs by market sector (residential, residential income-eligible, and commercial and industrial) from 2015 to 2020 for electric and natural gas, respectively.

² Note that although the savings are not quantified here, the electric portfolio also includes delivery of energy efficiency services to customers that heat with delivered fuels.

³ As indicated in Appendix C, most vendors are either headquartered or have a physical presence in Rhode Island. The number of FTEs reported do not include customer employees who assist in various ways with project implementation in their own facilities.

Figure 1-1. Summary of FTEs (2015-2020)⁴



Source: Guidehouse analysis and 2018 study

⁴ “Other” refers to FTEs that are associated with multiple different programs across both the gas and electric sectors, such as marketing, the National Grid workforce and, for 2020, COVID-19 training.

Table 1-1 Summary of FTEs (2015-2020)

	2015	2016	2017	2018	2019	2020
Electric Programs						
Commercial and Industrial	210.0	241.1	263.5	250.0	265.0	203.7
Residential Income Eligible	37.0	42.3	46.0	45.8	65.1	59.1
Residential Non-Income Eligible	125.4	104.0	98.1	168.9 ⁵	284.8 ⁶	263.7
Gas Programs						
Commercial and Industrial	32.0	36.1	34.4	31.9	28.7	19.8
Residential Income Eligible	43.8	41.4	36.5	39.4	56.2	38.5
Residential Non-Income Eligible	172.1	159.3	174.9	191.6	212.6	189.2
Other						
CAP Agencies ⁷	34.0	38.0	35.0	35.0		
National Grid ⁸	41.6	39.9	38.2	39.5	43.3	44.4
Marketing ⁹					9.0 ¹⁰	9.0
COVID-19 Training						0.3
Total	695.8	702.2	726.5	802.1	964.6	827.5

Source: Guidehouse analysis and 2018 study

⁵ The total for Residential Non-Income Eligible Electric FTEs in 2018 was incorrectly totaled from the component programs and was shown in previous reports at 170.9, when it should have been 168.9. With this correction, the total number of FTEs in 2018 is 802.1. This change has been reflected in Table 2.

⁶ Guidehouse updated the 2019 EnergyWise and EnergyWise Multifamily FTEs based on interviews with RISE on February 24, 2021, March 2, 2021 and written communication with RISE on April 1, 2021. RISE indicated there were 224 FTEs from trade allies associated with the EnergyWise program in 2019. Guidehouse believes these FTEs were not accurately captured in 2019 and in the years prior. This has caused the significant increase in FTEs from 2018 to 2019. RISE indicated there were 20 FTEs from RISE and 15 FTEs from subcontractors associated with the gas and electric EnergyWise Multifamily program in 2019. Guidehouse adjusted the 2019 gas and electric FTEs associated with the EnergyWise Multifamily program to align with the information received from RISE in the 2021 interview. Although this re-estimation of FTEs might also be associated with analyses prior to 2019, since Guidehouse did not prepare these analyses, it did not change any FTEs associated with the EnergyWise program prior to 2019.

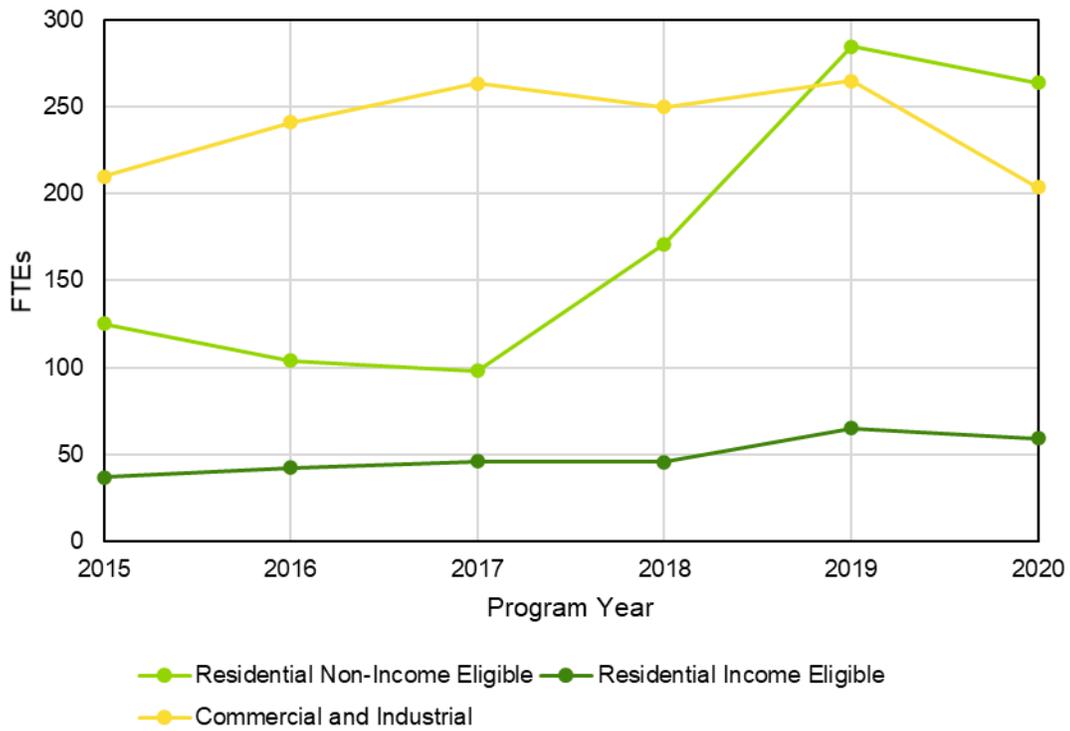
⁷ Note that for the 2019 and 2020 analysis, CAP Agency staff were included within the Residential Income Eligible program under both Electric and Gas.

⁸ In years prior to 2019 a 2,016-hour work year was assumed when calculating FTEs. National Grid changed this assumption in recent years to a 1,768-hour work year. This new assumption was implemented beginning in 2019 and resulted in a slight increase in FTEs.

⁹ Beginning in 2019, marketing was contracted to a new vendor, resulting in an increase in jobs; these are therefore shown separately.

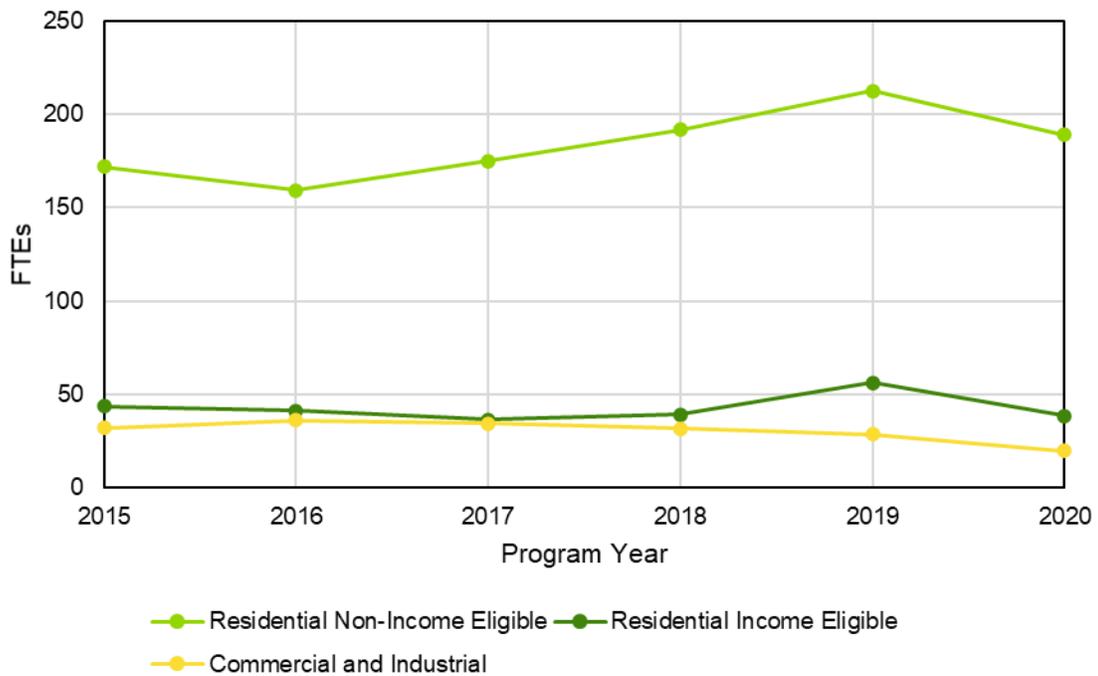
¹⁰ In the interview with the marketing agency, Mower, on March 12, 2021, Guidehouse discovered there had been a miscommunication in the number of FTEs during the interview with Mower in 2020. Mower had provided the number of FTEs for National Grid programs across all the states the programs run in, not just Rhode Island. There was no reported change in the number of FTEs associated with the Rhode Island National Grid Rhode Island energy efficiency programs in 2020 when compared to 2019, so Guidehouse adjusted the 2019 value to 9 FTEs.

Figure 1-2 Electric Program FTEs (2015-2020)



Source: Guidehouse analysis for 2019 and 2020, and 2018 study

Figure 1-3 Gas Program FTEs (2015-2020)



Source: Guidehouse analysis for 2019 and 2020, and 2018 study

The success of the delivery of the National Grid programs is dependent on the efforts of many workers in different roles. Two main types of service providers are identified in the report: support service providers and direct service providers. Support service providers include program design and planning consultants, marketers, rebate processors, and evaluators. These FTEs are usually embedded within the broader reported number for the program. Direct service providers are workers who are contracted by National Grid to execute a given program. The report provides a description of every National Grid program, as well as the company responsible for the delivery of the program.

In March of 2020, COVID-19 was declared a global pandemic. This had a significant impact on the operations of the Energy Efficiency programs in Rhode Island in 2020. Many of the program shut down for three months in the spring and early summer. Some programs were able to adapt to the inability to do anything in person and keep operating, but the workforce associated with some programs had to be furloughed. The majority of vendors interviewed throughout this study indicated there were no permanent job losses among their staff due to COVID-19, even if there were furloughs. Therefore, for the purposes of this study, Guidehouse used the FTEs provided by vendors for the end of 2020. This meant only permanent job losses among the vendor's staff were captured, and not temporary layoffs or furloughs. Additionally, it is important to note that multiple vendors also indicated that throughout the pandemic there has been no recorded transmission of COVID-19 linked to an employee working on the Rhode Island Energy Efficiency programs and a customer.

National Grid programs and delivery strategies were substantively the same in 2020 as they had been in 2019. This is due, in part, to 2020 being the third year of the three-year Least Cost Procurement Plan for 2018-2020. However, there were some differences that resulted in increases and decreases of FTEs across the various programs. Interviewed vendors indicated that increases occurred due to new program offerings or initiatives, increased spending, and as a result of a higher number of residential projects occurring across some programs as a result of people staying home in 2020 due to the COVID-19 pandemic and becoming more interested in financial savings associated with the programs, as well as having more time to focus home upgrades. Guidehouse's interviews and analysis indicate the adaptability of the workforce during the pandemic to respond to the limitations on customer interactions while still responding to a sustained demand for energy efficiency. Certain program FTEs decreased in part due to suspected market saturation, either with customers or with the measures themselves and due to turnover in the workforce and a lag in worker replacement. Additionally, some programs FTEs decreased because of prolonged layoffs due to COVID-19.

Guidehouse also prepared a "counterfactual" analysis for this report of what FTEs might have been if not for the pandemic. This is presented in Section 7 of this report.

1. Introduction

As mandated by and with the formal approval of the State of Rhode Island, National Grid delivers a state-approved portfolio of energy efficiency programs and services referred to in state enabling legislation as “demand-side management programs”¹¹ (the programs) to all market sectors it serves in Rhode Island, funded by ratepayers primarily through electric and gas utility rate surcharges and supplemented by other funding sources, including Forward Capacity Market revenue. The Rhode Island programs focus on both new construction and retrofit of existing buildings. Programs deliver cost-effective services and energy savings to building owners and tenants, to residential customers residing in single-family and multifamily buildings, to government and non-profit institutions, to small and large commercial businesses, and to manufacturers.

Overall, the 2020 program offerings were similar to those in 2019, with the addition of some new programs. Spending in 2020 decreased when compared to 2019. In 2020, National Grid spent a total of \$112,665,924 on electric and gas energy efficiency programs in Rhode Island, a 19% decrease when compared to 2019. Twenty-one percent of 2020 Program expenditures, \$24,097,931, was for gas programs, while 79%, \$88,567,993 was for electric programs.¹² These programs created 318,845 million British thermal units (MMBtu) of natural gas savings and 157,346 megawatt hours (MWh) of electricity savings.¹³

Rhode Island General Law 39-2-1.2(k), enacted by the Rhode Island General Assembly in 2012, requires that

Each year, the office [RI Office of Energy Resources] and the council [EERMC] shall submit to the governor, the president of the senate, and the speaker of the house of representatives, separate financial and performance reports regarding the demand-side management programs, including the specific level of funds that were contributed by the residential, municipal, and commercial and industrial sectors to the overall programs; the businesses, vendors, and institutions that received funding from demand-side management gas and electric funds used for the purposes in this section; and the businesses, vendors, and institutions that received the administrative funds.

In fulfillment of this requirement, National Grid has prepared for submission several financial and performance reports on the programs and has developed a list of businesses, vendors, and institutions that received funding from program funds, as well as businesses, vendors, and institutions that received administrative funds. In addition to fulfilling the specific financial and performance reporting requirements, National Grid has undertaken and is submitting this “Rhode Island 2020 Energy Efficiency Workforce Analysis Report”. This is the seventh consecutive year that National Grid has provided a narrative report describing the jobs associated with these expenditures and the workforce that delivers the energy efficiency programs offered.

Although employment directly associated with National Grid programs is not a formal program goal, it is a significant additional economic benefit that investments in energy efficiency

¹¹ Rhode Island General Laws § 39-2-1.2(b).

¹² The Narragansett Electric Company d/b/a National Grid, 2020 Energy Efficiency Year End Report and 2019 Year End Spend.

¹³ The Narragansett Electric Company d/b/a National Grid, 2020 Energy Efficiency Year End Report.

contribute to Rhode Island and to participating businesses. Furthermore, without the availability and contributions of a workforce to deliver programs, identify opportunities for energy efficiency, and install energy efficiency improvements, the demand-side savings that R.I. General Law 39-2-1.2 is intended to create would largely not occur. The report describes the work and workforce associated with program development, design, marketing, management, delivery, and evaluation and attempts to estimate the number of jobs directly associated with National Grid's 2020 expenditures for programs that originate from energy efficiency funding sources. Accurately calculating the numbers of these jobs is challenging since it depends on the number and types of employees engaged, be they full-time or part-time, and numbers of hours worked to deliver programs, which may be captured by employers for payroll and business planning, but is not typically reported to National Grid unless for billing purposes.

This report builds on Rhode Island workforce studies performed by Peregrine Energy Group for 2013 to 2018, as well as the 2019 workforce study performed by Guidehouse. Please see section 6.1, "Overview of Methodology," for more details on how the FTEs for the 2020 workforce study were calculated. As in prior years, Guidehouse is presenting workforce counts as "full-time equivalent" (FTE) employees. It is assumed for the purpose of this study, as in past years, that one FTE equals 1,768 actual work hours regardless of job responsibility (in addition to vacation, sick, holidays or other leave time), or the equivalent of one person working eight hours a day for 220 work days in an average year. In many instances, each FTE counted as associated with a National Grid program represents the actual part-time labors of multiple individuals who are associated with delivery of programs in Rhode Island, but also may be engaged in other work-related endeavors.

For the purpose of this study, the workforce engaged in program delivery does not "result from" the programs, but rather is "associated with" the energy efficiency programs. While Guidehouse can confirm that program budgets have funded employers with whom National Grid has contracted to support 2020 programs, no information regarding participants' motivation for replacing older inefficient equipment with new efficient equipment was provided. Therefore, to eliminate the question of causality, FTE counts are shown as employment "associated with" the programs, rather than "resulting from."

Several pieces of information were required to produce the findings presented in this report. Guidehouse used the following methodology to determine the 2020 FTEs:

1. Guidehouse scaled the 2019 FTEs developed by Guidehouse to 2020 FTEs by using the ratio of each program's spending for 2019 and 2020¹⁴, with 2020 spending adjusted downward by 2% per year to account for inflation effects; hence, both the 2019 and the 2020 spending values are in 2018 dollars. The ratio of 2020 spending to 2019 spending for each program was multiplied by the 2019 FTEs for that program to get an initial 2020 FTE value. This approach is valid because 2020 was the third year of a three-year program and no major changes unrelated to the COVID-19 pandemic occurred in the design or delivery of the overwhelming majority of programs, meaning that any change in spending likely could have resulted in a change in FTE's.
2. Guidehouse did not hear from vendor interviews that the pandemic changed the relationship between the program spending and FTEs at the individual program level. However, the pandemic influenced changes in some programs due to the increase in

¹⁴ Spending information from The Narragansett Electric Company d/b/a National Grid, 2020 Energy Efficiency Year End Report.

virtual interactions. For these programs, Guidehouse made manual adjustments to the program FTEs where this had a significant impact.

3. Guidehouse conducted several interviews with both vendors contracted by National Grid as well as different National Grid employees; a total of 19 vendor interviews and 7 National Grid interviews were conducted. The information gathered in these interviews was used to either confirm or adjust the values calculated through scaling. The interviews helped inform Guidehouse on the program changes that occurred in 2020 due to the COVID-19 pandemic and make the necessary adjustments to the FTEs based on the effects of the pandemic on the workforce.
4. Vendor spending provided by National Grid was used to ensure FTEs reported by specific vendors were reasonable.

The sections that follow describe the Energy Efficiency Workforce, details about Support Services and Direct Service Providers, Analysis of Workforce FTEs, and Qualitative Findings and Observations.

The global pandemic that struck the world in 2019, known as COVID-19, had a significant impact on the operations of the Energy Efficiency programs in Rhode Island in 2020. The impact the pandemic had on the workforce is discussed throughout the report. Overall, the programs displayed significant resilience and adaptability when it came to their program operations in 2020. It is important to note that multiple vendors indicated that throughout the pandemic there has been no recorded transmission of COVID-19 linked to an employee working on the Rhode Island Energy Efficiency programs and a customer.

2. The Energy Efficiency Workforce¹⁵

Guidehouse found that in 2020 an estimated **827.5** full-time equivalent jobs or “FTEs” were associated with National Grid programs in Rhode Island. A “full-time equivalent” employee often represents the combined labors of more than one person over the course of a year. The actual numbers of individual workers associated with program expenditures is far greater than the total number of FTEs.

Guidehouse recognizes two main categories of employers/employees that participate in delivery of National Grid’s programs. They are characterized as “Support Services Providers” and “Direct Services Providers.” The following section describes these two segments in more detail, followed by a description of how the analysis of FTEs associated with each type of provider was performed.

2.1 Support Services Providers

Support services providers are employers and employees involved in Program planning, administration, marketing, rebate processing, evaluation, and market research. Support services providers include:

- National Grid employees directly involved in energy efficiency program design and delivery, including regulatory matters, administrative management of contractors, marketing, some elements of customer education, and evaluation;
- Entities under contract to National Grid who provide marketing, outreach, public information, and other related services, including media placement and design of collateral marketing materials;
- Specialized firms that process rebate or incentive applications and make payments to contractors, distributors, and manufacturers that promote, provide, purchase, or install targeted high efficiency equipment;
- Independent program design consultants who assist National Grid with creation of annual program strategies, plans, and goals; and
- Evaluators of National Grid Program performance against those annual goals.

2.2 Direct Services Providers

The Direct Services Providers are specialized firms, sometimes contracted directly to National Grid, that may provide some or all of the following Program services: promoting, managing, and delivering individual Rhode Island energy efficiency programs; contributing engineering and other technical support to energy efficiency project development; supplying and/or installing energy saving material and equipment, and providing quality assurance inspections. This category includes, but is not limited to:

¹⁵ This section is adapted from the 2018 study “Analysis and Recommendations regarding the Current and Future Workforce Associated with 2018 Rhode Island Energy Efficiency Programs”, accessed at <http://rieermc.ri.gov/wp-content/uploads/2020/07/2018-attachment-5-workforce-report-final.pdf>. The use of text is done with the permission of Peregrine Energy Group and National Grid.

- National Grid account managers who provide outreach and direct technical assistance to customers, particularly for large commercial and industrial retrofits and new construction.¹⁶
- Energy services companies specializing in providing field services and installation program management - National Grid has contracts with such firms to deliver individual programs to particular market sectors. In this capacity, they will often provide a “turnkey” service that includes: outreach and intake of customer requests; scheduling site visits; technical assistance; engineering; material and equipment installations; referrals to and engagements with trades people; administration, management and supervision; warehouse materials purchasing and handling; quality assurance inspections; bookkeeping; and data entry and tracking.
- Companies specializing in logistical management and support - These firms engage, manage, and coordinate product suppliers and distributors, retail store offerings, and service networks. These firms often manage similar programs in both Rhode Island and Massachusetts to achieve acceptable economies of scale. They may work out of a Massachusetts office, but will spend significant time in Rhode Island working with local businesses.
- Electrical and mechanical engineers employed by contracted consulting firms - National Grid assigns and dispatches technical specialists to identify potential projects in customer facilities, quantify potential costs and savings, recommend actions that customers should take, and perform post-installation inspections to ensure that installed measures are performing as intended. The larger firms with the greatest capacity to provide these services are often based in Massachusetts, where there is a higher volume of business opportunity and activity.
- Equipment suppliers and retailers - National Grid encourages and provides incentives to equipment distributors, suppliers, and retailers throughout the Rhode Island service territory to market and sell targeted energy efficient equipment and materials directly to National Grid customers and installation contractors. An increasing number of suppliers and installation contractors participate in National Grid-sponsored “upstream” point-of-sale programs offering instant rebates. These equipment suppliers and retailers typically have Rhode Island storefronts, though they may be part of a regional or national business entity.
- Project expeditors - These are businesses that support National Grid Rhode Island initiatives that target both small and large commercial/industrial, institutional, and municipal customers. Many of these firms operate in Massachusetts as well as Rhode Island and, over time, some of the largest have extended their business activities regionally and nationally. They are primarily sales and project management organizations that rely heavily on independent subcontractors and tradespersons to perform installations. Generally, the more comprehensive their technology capabilities are, the more attractive they are to National Grid since they can provide a more comprehensive service to National Grid customers.
- Independent installation contractors - These are contractors in the field installing energy efficient equipment and approved materials for National Grid customers. They are typically based in Rhode Island, though some may operate out of offices in neighboring Massachusetts and Connecticut. They include Rhode Island-licensed electricians, plumbers, pipe fitters, and refrigeration experts, as well as other specialists such as weatherization contractors. Many of these installation contractors are active in more than

¹⁶National Grid is included as both a Support Services Provider and a Direct Services Provider because of the many different roles it has in the programs. Therefore, all National Grid FTEs are segregated and presented in a separate category, rather than integrated into FTE counts for markets and programs.

one market sector, sometimes as subcontractors to National Grid-designated program leads or to Project Expeditors (“PEX”), but also increasingly as self-directed installation vendors.

- Quality assurance inspectors - National Grid also contracts with inspectors that are independent of service delivery contractors who are responsible for installing equipment. The inspectors check a sample of completed installations or a sample of energy efficient equipment acquired by point-of-sale purchasers to ensure that program standards are being met, equipment is installed properly, and projected savings will likely be realized. Again, because of the similarities across state lines and cost efficiencies, National Grid will typically award Rhode Island inspections to the same firm providing this service for Massachusetts.

3. Support Services Providers Analysis¹⁷

The following section describes different support services and the entity responsible for its delivery.

3.1 EERMC Program Design and Planning Consultants

The Rhode Island Energy Efficiency and Resource Management Council (EERMC) has statutory oversight responsibilities for National Grid's energy efficiency programs including planning, program design, and evaluation. To help them with these responsibilities, the EERMC hires consultants to assist it in the performance of its responsibilities.

Delivery

Optimal Energy (Optimal), with the support of multiple specialized subcontractors, served as the primary consultants to Rhode Island's EERMC in 2020 and collaborated with National Grid on program design and development. Optimal, though headquartered in Hinesburg, Vermont, primarily serves Rhode Island from a Providence office where employees working on this program are based. The firm also provides like services for other state energy efficiency initiatives nation-wide.

Impacts of COVID-19

Guidehouse did not interview any staff associated with delivery of this program, so is unable to draw conclusions on the impacts of COVID-19.

3.2 Marketers

Marketers primary role is promoting National Grid Rhode Island's energy efficiency programs. Marketers' role generally includes media buying and planning, creative conceiving, campaign development and strategy, and facilitating planning sessions for program years.

Delivery

Eric Mower and Associates (Mower) is the primary marketing consultant for National Grid. Mower is the main agency of record servicing marketing for National Grid, handling programs across residential and commercial sectors. In 2020, Mower took on communications responsibilities, in addition to their regular marketing roles. This was as a result of an internal change in Mower and how they manage their teams where the communications teams were integrated into the marketing segment of the company. This allowed Mower to provide a more holistic story to the energy efficiency customers in Rhode Island.¹⁸

¹⁷ This section is adapted from the 2018 study "Analysis and Recommendations regarding the Current and Future Workforce Associated with 2018 Rhode Island Energy Efficiency Programs", accessed at <http://rieermc.ri.gov/wp-content/uploads/2020/07/2018-attachment-5-workforce-report-final.pdf>. The use of text is done with the permission of Peregrine Energy Group and National Grid.

¹⁸ Interview with Mower, March 12, 2021.

Impact of COVID-19

Starting in March 2020, Mower employees began working from home due to the COVID-19 pandemic. At the time of this report writing, employees were still working at home. However, this had no impact on the way Mower supported the National Grid programs and there were no layoffs in the company that impacted the number of FTEs associated with the National Grid programs in Rhode Island.

3.3 Rebate Processing Company

Rebate processors receive and process applications from participants for different rebates. They generally receive the applications by mail or online submission and proceed to validate whether the customers and equipment are eligible for the rebate. If a customer is found to be eligible, they can approve instant payment to them. All data related to this process is collected by the rebate processors and sent to National Grid. Rebate processors will also provide customers with support throughout the process using call centers, notification emails, or letters.

Delivery

In 2020, the rebate processing continued to be done solely by Energy Federation, Inc. (EFI). EFI is based in Westborough, Massachusetts, and processes rebates and incentives offered to program participants. Program participants include both consumers, i.e., National Grid customers who purchase targeted products and then apply for rebates, and equipment installers who promote and encourage National Grid customers to choose higher efficiency products.

Initiatives supported by EFI included Rhode Island Pool Pump and Upstream Circulator Pump Distributor programs, as well as the ENERGY STAR® Appliances, Lighting, and HVAC programs. They also provided call center support for the Rhode Island appliance program that focuses on high efficiency clothes dryers and dehumidifiers.

In 2020, EFI continued to work on the heating and cooling program by performing inspections in order to ensure the rebate was valid. EFI subcontracted to CLEARResult to perform equipment inspections on-site as well as handle the related phone calls from customers.

Starting in 2020, EFI began processing the incentives for the ENERGY STAR® Gas and Electric HVAC programs. In previous years, this was done by CLEARResult. However, National Grid made this change in 2020 to streamline its processes across the various programs.¹⁹

For its Upstream programs, EFI made significant updates to the way they pay the incentives for sales made by manufacturers and retailers. This was a significant factor that contributed in an estimated 5% increase in the number of projects completed and customers served in 2020 over 2019.

Impact of COVID-19

Prior to COVID-19 being declared a pandemic by the World Health Organization (WHO), EFI had already transitioned their call center to work from home. After the declaration of the

¹⁹ Interview with CLEARResult, March 3, 2021

pandemic, the rest of EFI's workforce transitioned to work from home. This had no impact on the number of FTEs associated with National Grid's energy efficiency programs in Rhode Island nor did it change the number of hours required to do their jobs.

The inspections that CLEAResult performs for EFI transitioned to be completely virtual due to the pandemic. This occurred in the summer months, after inspections had been shut down completely for the spring of 2020.

The 5% increase in program activity observed in 2020 relative to 2019 would have been higher, had program inspections not been shut down for a couple of months in the spring of 2020 due to the pandemic.²⁰

3.4 Evaluators

To measure the performance of Rhode Island Program offerings against annual goals, National Grid contracts with independent consulting firms specializing in utility program evaluation. Many of these firms support National Grid evaluation needs in other states as well.

Delivery

DNV GL, based in Burlington, MA, provided approximately 40% of the Rhode Island program evaluation services in 2020, as a percentage of overall evaluation spending. This was an 18% decrease in the share of Rhode Island program evaluation services DNV GL served in 2019. Other evaluation firms perform energy efficiency evaluation services in Rhode Island as well. In 2020, these included, but were not limited to, Cadeo Group, The Cadmus Group, and Tetra Tech Inc.

Impacts of COVID-19

Guidehouse did not interview any staff associated with delivery of this service, so is unable to draw conclusions on the impacts of COVID-19.

3.5 COVID-19 Training

Due to the Personal Protective Equipment (PPE) requirements resulting from the COVID-19 pandemic in 2020, National Grid engaged Environmental Health and Engineering for six weeks²¹ to develop the PPE requirements for the various programs and host online trainings related to COVID-19 for all vendors. This work included some in-field inspection to ensure the various vendors were adhering properly to the COVID-19 policies; this work concluded in the fourth quarter of 2020.

Delivery

Environmental Health and Engineering specializes in emergency services, environmental health and safety compliance, remediation oversight and building commission. Environmental Health and Engineering designed the PPE requirements for each of the vendors that would be going to

²⁰ EFI Interview, March 8, 2020

²¹ Written communication with Environmental Health and Engineering on April 5, 2021

customer sites to ensure that proper health and safety protocols related to COVID-19 were followed and all parties were safe. The Environmental Health and Safety team also hosted online trainings for all vendors, so they were properly educated and equipped to return to work once the programs started back up in the summer. Environmental Health and Safety also went into the field to inspect vendors to ensure they were adhering to all the necessary policies for COVID-19 safety.

Impacts of COVID-19

The vendor Environmental Health and Engineering would not have been required had it not been for COVID-19.

4. Direct Services Providers Analysis²²

Based on its 2020 Energy Efficiency Year End Report, National Grid achieved 88% of its annual MWh savings targets and 71% of its annual MMBtu savings through its electric and gas energy efficiency programs. Achievement towards these energy efficiency goals in 2020 was the result of the aggregate efforts of the many Direct Services Providers who delivered the National Grid programs. This section describes each electric and gas program offered as well as the entity responsible for each program's delivery.

In 2020, National Grid employed multiple, targeted energy efficiency delivery strategies in Rhode Island. Energy efficiency programs described below were each designed for individual markets and reflect differences in the buying habits, drivers, and technical and financial resources of each market sector (residential, residential income-eligible, commercial and industrial) and their sub-sectors. Program delivery strategies varied with fuel type (i.e., electric vs. natural gas customers), characteristics of different customer rate classes, cost and benefits of different end-use technologies to classes of customers, and whether a program's objective was to affect energy efficiency in current operations or future energy use in new construction.

Please note that the implications COVID-19 had on the Rhode Island Energy Efficiency program operations and the workforce have been described where indicated by the interviewees; otherwise, this topic is not covered.

4.1 Commercial and Industrial Programs

In 2020, Commercial and Industrial (C&I) gas and electric programs continued to encourage installation contractors, both technology specialists and tradespeople, to take the lead in achieving National Grid's energy efficiency goals for large and small businesses. These C&I programs also target municipal facilities and large non-profit institutions (e.g., colleges and universities and healthcare facilities). At the same time, National Grid increasingly made use of "upstream" or "point-of sale" strategies, particularly for LED lighting, that discounted the purchase price of preferred, more energy efficient equipment to accelerate market transformation and replacement of older technology.

C&I programs differentiate between "prescriptive" and "custom" energy efficiency measures. Prescriptive measures, often lighting, qualify for pre-determined incentives or discounts from National Grid based on cost-effectiveness guidelines (e.g., hours of operation or equipment life). Custom and comprehensive measures are often more complex and are evaluated and approved for incentives based on actual total savings they projected to produce. In particular, the Large Commercial and Industrial Retrofit program encourages customers and their installation contractors to incorporate or bundle a mix of shorter payback, more certain, energy savings measures and longer payback, more complex, energy savings measures into projects, providing enhanced incentives for more comprehensive and deeper efficiency improvement.

²² This section is reproduced from the 2018 study "Analysis and Recommendations regarding the Current and Future Workforce Associated with 2018 Rhode Island Energy Efficiency Programs", accessed at <http://rieermc.ri.gov/wp-content/uploads/2020/07/2018-attachment-5-workforce-report-final.pdf>. The use of the text is done with the permission of Peregrine Energy Group and National Grid.

A National Grid Senior Analyst in Customer Energy Management and a Commercial and Industrial Program Manager both identified no significant program changes for 2020 relative to 2019 that were unrelated to COVID-19.²³

4.1.1 Large Commercial New Construction (Electric)

The Large Commercial New Construction program encouraged energy efficient design and construction practices in new and renovated commercial, industrial, and institutional buildings. The program also promoted the installation of high efficiency equipment in existing facilities during building remodeling and at the time of equipment failure and replacement. The program offered incentives to eliminate or significantly reduce the incremental cost of high efficiency equipment over standard efficiency equipment and provided technical support to assist customers to identify opportunities for incremental efficiency improvement in eligible buildings.

Delivery

The New Construction program was administered and promoted internally by National Grid staff. As noted above, it offered both technical and design assistance to customers to identify opportunities for incremental efficiency improvement in new building designs and to help customers and their architects/engineers to refine their designs to capture these opportunities. Outside consultants were assigned to assist customers to identify and incorporate energy efficiency solutions into new construction designs and to complete detailed studies that model and quantify energy savings. Commissioning or quality assurance was also offered to ensure that the equipment and systems operate as intended.

Impacts of COVID-19

Guidehouse did not interview any staff associated with delivery of this program, so is unable to draw conclusions on the impacts of COVID-19.

4.1.1.1 Engineering Support

To further support large commercial customers, National Grid contracted with consulting engineers who could be deployed by an account manager to assist a customer. Engineers identified potential custom projects, evaluated or modeled the potential energy savings, and helped the customer complete incentive applications. Some of these consultants brought expertise in specialties like data center energy efficiency improvement or laboratories and clean room technology. In other situations, the customer could propose a scope of work with their own engineer that National Grid could elect to support. Support from contracted consulting engineers was available through National Grid to witness project commissioning, to confirm that the installed measures were operating and performing as anticipated, and to ensure that predicted savings would be achieved. Consulting engineers are used for both new construction and retrofit projects.

²³ Interviews with National Grid on February 9, 2021

Impacts of COVID-19

Customers controlled whether or not the workforce associated with the energy efficiency programs could enter the premises to complete work; this resulted in a large number of projects pushed to 2021.

It was the responsibility of the PEX and other contractors to purchase necessary PPE (e.g., masks, goggles, gloves, etc.) to enter the premises. One PEX chose not to purchase the required PPE, as they felt it should go to the medical community instead and suspended its activities as a Project Expeditor.²⁴

4.1.2 Large Commercial Retrofit (Electric)

The Large Commercial Retrofit program replaces older, but still operating, less efficient energy equipment and systems with more energy efficient equipment. Energy efficiency improvements installed through the program include but are not limited to interior and exterior lighting and lighting controls; drives; heating, ventilation and air conditioning (HVAC) systems; building controls; combined heat and power systems; and street lighting. The goal is achieving persistent, measurable energy savings.

All existing commercial, industrial, and institutional customer facilities are eligible to participate. Customers in the program tend to be larger (i.e., have a monthly usage greater than 1,000,000 kWh) or are pursuing custom electricity saving measures not available through the prescriptive Direct Install Program. National Grid pays incentives to assist with defraying a portion of the costs associated with installing equipment. National Grid also can choose to provide engineering assistance to customers to assist with identification of cost-effective opportunities.

Delivery

The Large Commercial Retrofit program is a market-based initiative with no contracted program administrator or designated preferred suppliers. National Grid has established performance standards for qualifying energy efficiency measures and allows customers to choose the suppliers and installation vendors they want to work with. Customers submit applications to National Grid for incentives that are based on projected savings that will be achieved and receive payments from National Grid that help defray costs associated with installed equipment. Installers of record for these projects are identified by National Grid as either “customers,” “installation contractors,” or PEX.

In addition to the main program described above, several initiatives exist within the Large Commercial Retrofit program, described below.

Impacts of COVID-19

The shutdowns in the spring of 2020 due to the COVID-19 pandemic resulted in a decrease in the number of projects completed in the Large Commercial Retrofit. This decreased both the

²⁴Interview with National Grid on February 10, 2021

spending of the program in 2020 when compared to 2019, as well as the number of FTEs associated with the program in 2020 compared to 2019.

4.1.2.1 Upstream Lighting (Electric)

National Grid's Commercial and Industrial Upstream Lighting program encourages customers and electrical contractors to choose higher efficiency lighting products at the point of purchase. This program was launched due to a recognition that commercial customers were going to large lighting distributors to purchase stocks of replacement lighting to have should lights fail or to undertake large-scale change-outs. At that point in time, fluorescent lighting predominated the commercial market. National Grid reasoned that if a customer again purchased and installed the same "old technology" fluorescent product as was being replaced, this would be a major lost opportunity for efficiency improvement; but if the customer could be influenced to purchase and install a more efficient LED product, both National Grid and the customer would realize the benefits and savings of energy use reduction.

Delivery

National Grid contracted with CLEARResult to administer, support, and promote Upstream Lighting. The same team manages the Upstream Lighting program in Massachusetts. CLEARResult has engaged manufacturers and enlisted lighting distributors throughout Rhode Island, offering incentives from National Grid to reduce list prices of specified energy efficient products to electrical contractors and businesses, with the goal of transitioning and transforming stocking practices and customer purchasing behavior.

CLEARResult processed reimbursements to suppliers for discounts provided and managed a quality assurance process to ensure that recorded sales were legitimate. Larger distributors were audited to verify that product sold through the program were indeed going to the customers of record.

Impacts of COVID-19

CLEARResult indicated in an interview that COVID-19 had no impact on the number of projects completed or the number of FTEs associated with the Upstream Lighting program. However, COVID-19 did change the way certain aspects of the program are run. For example, the market outreach specialist at CLEARResult, whose role is to interact with distributors and manufacturers, had to transition to completely virtual interactions. Though this decreased travel time associated with the role, they reported that the quality of the interactions decreased. After the pandemic is under control, CLEARResult plans to return to in person interactions with the distributors and manufacturers.²⁵

4.1.2.2 Energy Smart Grocer

National Grid contracted with CLEARResult, through its Massachusetts office in Westborough, to offer the Energy Smart Grocer sub-program, which helped large and small supermarket chains identify and implement energy efficiency improvements. Participating customers were part of local and regional chains and secured through outreach in partnership with the RI Food Dealers Association. Working in 60 kW or larger food markets, CLEARResult focused on refrigeration

²⁵ Interview with CLEARResult, March 3, 2021

improvement, controls, and lighting. CLEAResult employed auditors and other technical staff to identify and develop efficiency improvement projects, helped them engage contractors to complete upgrades, provided technical support as needed, and performed quality assurance inspections of installations.

The program also achieves gas savings through HVAC equipment operation, due to dehumidification and keeping cold air in refrigerated cases rather than letting it spill into supermarket aisles.

4.1.2.3 Industrial Energy (Gas and Electric)

National Grid contracted Leidos Engineering, Inc. to help Rhode Island and Massachusetts manufacturers identify and implement energy efficiency improvements in industrial processes.

Leidos provided targeted engineering support to participating customers, functioning as an owner's representative as customers developed projects with specialty vendors and contractors. A typical engagement included meetings with a customer to review existing operations, major energy uses, and current production issues. Following a guided walk-thru of the facility, Leidos engineers prepare a summary of opportunities and suggested next steps. Depending on the specific interests expressed, Leidos helped identify vendors/contractors and prepared applications for National Grid incentives. Most industrial projects were process-related, and customers often use their own employees for installation and construction.

Leidos has reported that market saturation is becoming an issue in Rhode Island due to the relatively small size of its industrial base. However, Leidos noted that there were still many measures that could be implemented to achieve greater savings within the current customer base.

Impacts of COVID-19

In the spring, similar to other programs, Leidos was unable to complete any site visits due to the COVID-19 pandemic. Therefore, the Industrial Energy program developed a virtual audit protocol to decrease the risk of COVID-19. Additionally, instead of sending their workforce to customer sites to deploy metering, the energy advisors at Leidos mailed metering and logging equipment to customer sites. Along with the equipment, Leidos provided thorough set up instructions, so the customers were able to install the equipment themselves. Leidos also provided a shipping label that allowed customers to send back their old equipment. This allowed the program to continue operating despite the fact that their workforce was not able to travel to customer sites. Leidos indicated they had a significant backlog of projects that they were able to work through during the spring of 2020 when they could not access customer sites.

Since late summer, Leidos operations have gone back to normal. Other than for some data analysis, Leidos has resumed in person site visits, though they have adopted the necessary social distancing rules and the appropriate PPE.²⁶

²⁶ Interview with Leidos, March 10, 2021

4.1.3 Small Business Direct Install (Electric and Gas)

In 2020, the Small Business Direct Install program continued to provide direct installation of prescriptive energy efficient lighting, non-lighting retrofit measures, and minor gas efficiency measures.

Delivery

The Direct Install program's lighting measures were delivered by RISE Engineering of Cranston, Rhode Island and sourced from a product vendor. RISE provided turnkey installation services to this market. According to National Grid, RISE continued to handle 70% of the applications serviced in 2020, similar to 2019. The 30% of remaining applications not serviced by RISE were serviced through the Customer Directed Option (CDO).²⁷

RISE employees engaged in the Small Business program were responsible for marketing and lead generation as well as staffing an intake center that was responsible for pre-qualifying potential customers. RISE energy specialists performed field audits of customers' facilities, and data entry staff used completed audits to generate proposals for customers. Audits also resulted in referrals to the Commercial and Industrial Gas Program. When a customer accepted a RISE proposal, a RISE project manager ensured that sufficient product was available for the installation, issued that product to the installer/electricians, and closed out the work order when the installation was completed. RISE maintained a supervised warehouse for material distribution and materials handlers. RISE also employed back office and accounting staff to service this program. Active electricians included both RISE employees and employees of sub-contractors.

Impacts of COVID-19

As a result of the safety precautions needed to be taken due to the global pandemic, RISE began completing virtual audits. Customers could video chat with the RISE energy specialists to show them their facilities or they could send photos directly to RISE of their facilities. This had no impact on the RISE FTEs associated with the Small Business Direct Install program.²⁸

4.1.4 Large Commercial New Construction and Retrofit (Gas)

Large Commercial and Industrial Gas programs supported installation of energy efficient gas heating and water heating systems, certain thermal envelope measures, and custom gas systems in existing buildings and in new construction. The program guidelines for measure eligibility were the same as for the Large Commercial Retrofit program and the New Construction program. All commercial, industrial, and institutional customers were eligible to participate.

The C&I gas programs offered technical assistance to customers to help them identify cost-effective conservation opportunities and paid incentives to assist in defraying part of the material and labor costs associated with the energy efficient equipment. A retrofit measure must demonstrate that it will increase energy efficiency above the performance of the still-functional equipment it will replace. For new construction or in the case of failed equipment, "lost

²⁷ Interview with National Grid, February 16, 2021

²⁸ Interview with RISE Engineering, February 24, 2021

opportunity” rules apply. New equipment, to be eligible for incremental incentives, must exceed the efficiency of what applicable codes require.

Delivery

National Grid handles the roles of program manager, project coordinator, customer engagement, and data management internally. RISE is engaged in the program in a technical support role. RISE technical staff included multiple engineers, field staff performing audits, an installer doing minor installations for the Small Business Direct Install program, and a quality assurance specialist who validated engineering work. Project energy measures included weatherization, controls, process automation, combustion efficiency, heat recovery, combined heat and power, steam traps, and hot water upgrades. RISE performed post-installation inspections of completed projects.

Leidos Inc. continued to handle retrofits and new construction for industrial customers. Leidos completes in field assessments of facilities to identify measures, and then develops a workplan to turn those measures into projects. Leidos completes all energy savings calculations and coordinates with the contractors to execute the project. In 2020, Leidos presence in the new construction market grew, largely as a result of National Grid expanding their role in supporting the new construction services.

Impacts of COVID-19

Due to the shutdowns that occurred in the spring of 2020, many contractors working on the Large Commercial New Construction and Retrofit programs had to furlough or, in some cases, fully lay off their employees. This resulted in an overall decrease in the number of FTEs associated with the program in 2020 compared to 2019.

Though the contractors that work on the program did experience layoffs resulting in an overall decrease in FTEs, neither Leidos or RISE let go of any employees in 2020 due to COVID-19. In the summer, when the programs could start up again, RISE and Leidos developed virtual audit processes, allowing their workforce to continue completing their jobs.

4.1.5 Commercial ConnectedSolutions

The Commercial ConnectedSolutions program is a technology-agnostic demand-response program and provides an incentive to participating C&I customers for verifiable shedding of load in response to a signal or communication from National Grid during curtailment events. A new Daily Dispatch option was added to the Targeted Dispatch option in 2020.²⁹

Delivery

Five curtailment service providers (CSPs) were certified and contracted for the Commercial ConnectedSolutions program in 2020, with one new CSP added. They market to and recruit customers under the terms of the program. The most active of these is CPower Energy Management, which provided about half of the contracted demand reduction, including many

²⁹ National Grid, Annual Energy Efficiency Plan for 2020, October 15, 2018

customers in the municipal sector. The program employed EnergyHub to provide the Demand Response Management System (DRMS) platform for the program.

Impacts of COVID-19

For the Commercial ConnectedSolutions, an onsite visit is required when enrolling customers into the program. This allows National Grid to gain an understanding of the amount of demand customers will be able to reduce based on the solutions provided. Due to COVID-19, National Grid transitioned this to a virtual assessment. Additionally, it was noted that due to pandemic, it was more difficult to engage customers than in previous years.³⁰

4.2 Income Eligible Residential Programs

National Grid offers Income Eligible programs to its electric and gas customers residing in single family (1-4 unit) dwellings and multifamily (5 or more unit) buildings or developments who are eligible for the Low-Income Heating Assistance Program (LIHEAP). This target audience is eligible to receive energy-related assistance through federal and state programs. National Grid's program strategy in this market is to support, complement, and leverage the resources and services provided by these other programs.

4.2.1 Single Family – Income Eligible Services (Gas and Electric)

National Grid's Income Eligible Single Family program provides low-income customers in 1-4 unit buildings with home energy assessments, installation of energy efficient LED lighting, appliances, heating systems, domestic hot water equipment, and weatherization measures. For many decades, energy services have been, and continue to be, provided to this market sector through local non-profit Community Action Program (CAP) agencies under contract to the Rhode Island Department of Human Services (DHS). These agencies deliver the federally funded Weatherization Assistance Program (WAP) and LIHEAP. These services are fuel-blind and available to income-qualified gas, oil, propane, and electric heat customers as budgets allow. Six CAP agencies provide statewide coverage to Rhode Island residents.

Under the Income Eligible Single Family program, CAP agencies provide three types of building audits: audits focused on lighting and appliances only that install lighting products; audits providing detailed recommendations and work orders for insulation contractors, heating system and ventilation fan installers; and comprehensive audits that do both. Building Performance Institute (BPI) -certified auditors complete building assessments and work orders.

Delivery

CLEAResult, working out of offices in Providence, Rhode Island, has been managing the Income Eligible Single Family program since 2013. CLEAResult serves as the conduit for National Grid payments to the CAP agencies and works closely with the Rhode Island DHS staff to coordinate and optimize delivery of ratepayer-funded services and traditional weatherization assistance.

³⁰ Interview with National Grid, March 11, 2021

Under CLEARResult's management, productivity and quality of service delivery to low income residents has continuously improved. CLEARResult has expanded training for current auditors, increased quality control, and improved oversight of National Grid-funded services and installations delivered through CAP agencies.

Several independent contractors are active in income-eligible weatherization, installing insulation and completed air sealing for the CAP agencies. Many of these contractors also are active in the EnergyWise Single Family program. Contractors are selected off a state-approved list and offer fixed pricing statewide for installed measures. Each agency has a handful of insulation contractors they typically work with. The CAP auditing staff inspects completed insulation work post-installation to ensure it was properly installed.

Additionally, several heating system repair and replacement contractors are active in this market. Heating system upgrades are put out to bid to contractors, and heating contractors also are used for post-installation inspections. There are also electrical contractors that are approved to repair and install bathroom fans to address humidity issues and to replace or disable antiquated knob and tube wiring (a code requirement that must be done for safety purposes before insulation can be installed in walls and ceilings).

ACTION, Inc., based in Massachusetts, oversaw the refrigerator replacement service provided to income eligible residential customers. This included product procurement, ordering, delivery, removal and disposing of old appliances, and conducting quality assurance surveys.

Impacts of COVID-19

There was significant turnover seen in the workforce associated with the Single Family - Income Eligible Services program in 2020. Many employees who were close to retiring opted to retire in the spring instead of navigating the uncertain work environment that was brought on by COVID-19. CLEARResult hired employees to replace those who had retired, and in some cases multiple employees had to be hired to replace a single employee who had retired. This was due to the fact that employees close to retirement were extremely experienced with their roles and could handle a greater workload than a new employee entering the workforce would be able to. CLEARResult indicated there is also significant turnover with new employees in this industry, due to the nature of the work. Therefore, as might be expected, there were some new employees brought on this year that chose to pursue new opportunities after only a few months. Overall, this resulted in a decrease of FTEs across the gas and electric Single Family – Income Eligible Service programs.³¹

The CAP agencies had furloughed many employees from March through August of 2020 due to the inability to complete field work. CLEARResult reported that all employees from the CAP agencies were brought back into the workforce later in the year, resulting in no permanent loss of FTEs. Interviews were not conducted with CAP agencies to confirm this.

The number of customers served through the program decreased 20% in 2020 relative to 2019. The entire decrease in customers served was a direct result of the pandemic. In the spring and summer, customers would not allow field staff into their homes to complete assessments or

³¹ Interview with CLEARResult on February 24, 2021

installations. The addition of new health and safety requirements slowed down the program, causing the field work, when it did start up again, to take significantly longer.

The program transitioned to virtual home assessments and, instead of sending field staff to install small measures such as lightbulbs, the equipment would be shipped to the customer with installation instructions. This allowed the customer to install measures themselves and limited the amount of in person interaction required.

4.2.2 Income Eligible Multifamily (Gas and Electric)

Since 2013, National Grid has provided energy efficiency offerings for income-eligible multifamily properties with five or more units through the EnergyWise Multifamily program. This suite of programs addresses both gas and electric opportunities. Comprehensive energy services available to these customers included energy assessments, incentives for heating and domestic hot water systems, cooling equipment, lighting and appliances. Services provided to income-eligible and market rate units and buildings through EnergyWise Multifamily program are tracked separately.

Additionally, and in parallel, the Income-Eligible Residential New Construction program works with Rhode Island Housing, local housing authorities, and developers of income-eligible housing to encourage construction of energy efficient properties.

Delivery

In conjunction with its delivery of EnergyWise Multifamily services, RISE Engineering, based in Cranston, Rhode Island, had primary responsibility for delivery and coordination of Income Eligible Multifamily services. RISE staff serve as project managers for retrofit projects, meeting with building facility managers and writing work orders and scopes of work (e.g., for air sealing, attic insulation, lighting fixtures, and even replacement refrigerators from retailers) for low-income residents. Independent contractors installed weatherization materials (insulation and air sealing) and heating equipment components. CMC Energy Services, Inc. provided quality assurance (QA) inspections to a sample of income eligible MF residential customers served. CLEAResult provided support for energy efficient construction of new income-eligible units through the Residential New Construction program.

Impacts of COVID-19

Guidehouse did not interview anyone associated with this program, so is unable to draw conclusions on the impacts of COVID-19.

4.3 Residential (Non-Income Eligible) Programs

In 2020, National Grid's residential programs continued to offer a range of services and incentives to encourage residential electric and natural gas customers, be they owners or tenants, to install energy efficient equipment and materials and to operate their homes with energy efficiency in mind. Programs promoted conversion of residential lighting to LED technology, purchase of more energy efficient appliances, building weatherization, HVAC system replacement, and energy efficient new construction.

Large energy services companies who specialize in supporting utility energy efficiency initiatives are under contract to manage and deliver individual programs. The energy service company's role is, typically, to engage a wide range of market actors, including both buyers and sellers of energy efficiency products and services, who are needed to make a residential sector sub-market work. The company then brings these stakeholders together, provides education, training, and technical support, and facilitates investments that result in energy use reduction. Delivery information on each program is detailed below.

4.3.1 EnergyWise (Gas and Electric)

In 2020, EnergyWise provided residential customers living in single-family homes (defined as 1- to 4-unit buildings) with a comprehensive energy assessment of energy use and building-specific recommendations for actions to take to increase home energy efficiency. These included:

- Technical assistance to identify how and where to improve building insulation and whether to replace appliances, heating systems, and thermostats with high efficiency models.
- Upgrading to LED lighting, low-flow showerheads, low-flow faucet aerators and smart power strips.
- Work orders for weatherization services (insulation and air sealing), for which National Grid would provide financial incentives. If upgrades were made, quality assurance inspections were also provided.
- Rhode Island Heat Loan, which provides 0% interest financing to eligible single-family customers to support the adoption of recommendations made during the assessment.

Delivery

For 2020, National Grid again contracted with RISE Engineering, based in Cranston, Rhode Island, to manage and deliver the EnergyWise Single Family program. Staff had a wide range of program roles: program managers, office and field staff supervisors, field auditors, field installers and technicians, field inspectors, intake staff and schedulers, warehouse and material management staff, electricians, quality assurance/quality control inspectors, database management, and accounting and contract oversight personnel.

CMC Energy Services, Inc. provided quality assurance (QA) inspections to a sample of EnergyWise Single Family residential customers served. QA addressed all phases of service delivery and included review of field auditors' performance, post-audit counts of installed measures, and post-weatherization site visits to confirm proper installation technique and customer satisfaction with results.

Impacts of COVID-19

Starting in March 2020, the program was shut down for three months. The program began to start back up in June, and was fully operational again by August, with some changes to accommodate the new health and safety protocols related to COVID-19.

In 2019, a two-person auditor and installer team conducted the residential energy assessments, also called building audits, providing analysis, education, and instant savings from installations

in a single visit. Starting in June 2020, RISE transitioned to a single-person audit visit, due to the necessity for increased health and safety precautions during the COVID-19 pandemic. This change in the auditor and installer team from two people to one person resulted in approximately a 15% decrease in the number of RISE FTEs associated with the program in Rhode Island. Due to budgetary restraints resulting from the decrease in the lighting aspect of the program (unrelated to COVID-19), which used to cover the overhead of sending in a two-person technician team, RISE will continue with the one-person installer team after the pandemic is under control. RISE worked to redeploy the energy technicians that were no longer needed as part of the auditor and installer team. Some of the energy technicians are now electricians in training or were moved to the warehouse.

In addition to the one-person audit team, RISE began offering virtual assessments. This reduced the time required for field staff to be on site and in customer's homes. With a virtual assessment, only the technician needs to travel to the customer's home to do a pretest and verify the scope of work. A virtual audit reduces the amount of time spent traveling; however, it can increase the time it takes to scope the project and the contract. National Grid was only marketing virtual assessments, and RISE offered it as the first choice for customers, while some customers still requested in person assessments. In those cases, RISE would send one auditor to complete the assessment and the auditor would adhere to social distancing and wear the necessary PPE.

Recognizing the challenges the program faced due to COVID-19, beginning in mid-2020, National Grid offered an increased weatherization incentive of 100%, where audits were completed by October 31 and contracts were booked through year end 2020. National Grid marketed this program significantly throughout the summer and this mitigated the decrease in weatherization projects in 2020 compared to 2019. In 2019, 4,632 weatherization projects were completed and, in 2020, a total of 3,679 weatherization projects were completed. Weatherization projects could not be completed for 25% of the year (i.e., three months) due to the COVID-19 lockdowns resulting in an almost proportional decrease in weatherization projects of 21%. In the first quarter of 2021, RISE was still completing weatherization projects that were eligible for the 100% weatherization incentive because they were booked prior to October 31, 2020.³²

Paralleling the decrease in audits and building weatherization projects completed in 2020, the number of FTEs from contractors decreased by 20%. This was as a result of contractors decreasing the sizes of their crews through layoffs due to the decreased number of projects in 2020. However, RISE indicated that the numbers of the contractor firms they worked with increased as the pandemic caused some re-organizations.³³ The increase in new contracting firms did not increase the size of the overall workforce. There was still a net decrease in 2020 plus the 3 month or longer furlough results in a net FTEs decrease for this program.

4.3.2 Residential Consumer Products

In 2020, the Residential Consumer Products program was again coordinated with other regional utilities to promote the purchase of high efficiency household appliances and electronics. These appliances carry an ENERGY STAR® label. The program also offered refrigerator and freezer recycling, which helped address a significant barrier to purchasing a more efficient appliance.

³² Interview with RISE Engineering, March 2, 2021

³³ Interview with RISE Engineering, March 2, 2021

This appliance disposal program also has helped remove non-efficient units from the market (eliminating additional, older units in customer basements and garages and preventing them from entering the used appliance market), recycled appliance components, and captured and properly disposed of refrigerants. Additional consumer products like Wi-Fi thermostats, Tier 2 advanced power strips, energy efficient dehumidifiers, room air conditioners, and pool pumps have proven to be applicable to this point-of-purchase strategy and are similarly available from retailers.

Delivery

TRC Companies manages the ENERGY STAR® Appliances in Rhode Island and Massachusetts. As is the case with ENERGY STAR® Lighting, ENERGY STAR® Appliances is primarily a retail-store based initiative. TRC Companies engaged major retail outlets, providing the same support as for ENERGY STAR® Lighting. TRC also subcontracted for disposal and recycling of replaced air conditioners and dehumidifiers.

National Grid and the other regional utilities contract with ARCA Recycling Inc. to recycle older refrigerators and freezers as part of the holistic strategy to encourage the purchase of energy efficient products. ARCA, operating in Franklin, Massachusetts, is responsible for refrigerator collection, dismemberment, and material recycling. The ARCA workforce consists of employees that work at the Franklin recycling facility, transportation employees who travel into the field to pick up the appliances from customer's homes, administrative employees, account managers and call center agents to field customer questions.³⁴

As explain in section **Error! Reference source not found.**, Uplight began providing an online marketplace for residential consumer products late in 2019 to promote and provide a platform for the purchase of energy efficient appliances for residential consumers. The Uplight team consists of customer care representatives, program managers, e-commerce operators, reporting, product supply and analytics teams, as well as marketing and engineering employees.

Impacts of COVID-19

Due to the nature of the online marketplace, Uplight's workforce was not significantly impacted by COVID-19. National Grid advised Uplight to pause marketing for the program during the spring of 2020, but the marketing resumed in the summer.³⁵

Prior to 2020, ARCA employees would enter into customer homes to retrieve the appliances. Due to the health and safety precautions surrounding COVID-19, in 2020 ARCA began instructing customers to leave the appliances on their front porch or in their garage, so that they would be accessible by the ARCA pickup team and would not require any interaction between the ARCA employees and the customers. This decreased the amount of time the ARCA team had to spend at each customer location picking up an appliance, because the appliance was all ready for pickup by the time they arrive. This streamlined ARCA's process and allowed for the team to complete more appliance pickups per day. It was also more convenient for the customers, as they did not need to be home for ARCA to come pick up their old appliances.

³⁴ Interview with ARCA, March 1, 2021

³⁵ Interview with Uplight, March 9, 2021

After the global pandemic is under control, ARCA plans to continue the contact-less pickup due to the efficiencies it provides the program.

The economic hardships that customers faced in 2020 due to the global pandemic drove customers to have a higher interest in energy savings measures, increasing the amount of transactions done through the online marketplace. Additionally, customers were more interested in recouping the financial incentive associated with recycling an old appliance than they were in previous years. This resulted in an increase of nearly 35% in the number of units ARCA recycled in 2020 compared to 2019.³⁶

4.3.3 EnergyWise Multifamily (Gas and Electric)

In 2020, EnergyWise Multifamily continued to provide comprehensive energy services to multifamily customers in buildings with five or more units, including energy assessments, incentives for heating and domestic hot water systems, cooling equipment, lighting, and appliances. These same services were available to both market rate and income-eligible multifamily properties.

Delivery

RISE Engineering managed and coordinated the services offered across a portfolio of National Grid programs, including EnergyWise Multifamily, Commercial Multi-family, and Income Eligible Services (i.e., Low Income) Multi-family. RISE employees delivering multifamily programs included the Multi-family Operations Manager, a technical services director, field coordinators, field auditors and installers, warehouse materials handlers, and project intake and coordination staff. RISE staff also served as project managers for retrofit projects, meeting with building facility managers, making presentations to condominium boards and owners, and writing work orders and scopes of work (e.g., for air sealing, attic insulation, lighting fixtures, hot water systems and boiler resets, and even replacement refrigerators from retailers for low-income residents).

CMC Energy Services, Inc. (CMC) provided quality assurance (QA) inspections to a sample of EnergyWise Multi Family residential customers served. In addition to its regular PPE inspections, CMC Energy Services, Inc. also completed three to five PPE inspections for National Grid in Rhode Island. This included ensuring that the workforce in the field was adhering properly to the PPE and social distancing requirements.

Impacts of COVID-19

The EnergyWise Multifamily program was dramatically impacted by COVID-19. The decrease in the number of projects completed for the program was largely due to the fact that it was up to the building owners if they wanted to allow the workforce to visit its premises. It is important to note that when many units within the same building are completed at once, this only counts as one site. Therefore, if one building owner is not allowing site visits, then multiple projects could be impacted. It was particularly difficult for the program to access any publicly owned buildings, as well as any buildings occupied by elderly residents due to their increased risk associated with COVID-19.

³⁶ Interview with ARCA, March 1, 2021

RISE noted there was an opportunity for its workforce to enter a few buildings under some owners when the audit was paired with other work occurring on the multifamily property. For example, if someone was entering the building to do general maintenance, they occasionally contacted RISE and allowed the auditor to enter at the same time.

Though many programs were able to transition to virtual assessments, this was found to be more difficult for multi-family dwellings. Therefore, there was no meaningful transition made to virtual assessments for the EnergyWise Multifamily program in 2020.

The decrease in the number of projects completed in 2020 was mirrored by the decrease in the number of FTEs serving the program. Overall, there was a 30% decrease in the number of RISE FTEs serving the EnergyWise Multifamily program in 2020 when compared to 2019.³⁷

Due to COVID-19, CMC transitioned its inspections to virtual rather than in person. This required a significant amount of administrative and database changes to make this transition. However, this did not impact the number of FTEs associated with the program because the transition was done during the program shutdown in the spring, when there were no QA inspections happening, so CMC was able to reallocate its workforce to focus transitioning to virtual assessments. In addition to this transition, CMC provided virtual trainings during the shutdown to keep their workforce engaged and did not furlough or layoff any employees. Two employees did retire at the beginning of 2020, but they were replaced by new hires and there was no net impact on the number of FTEs.

Due to the decrease in the number of projects completed, there was also a decrease in the number of projects that CMC QA'd in 2020. Additionally, some customers opted to wait for the QA until in-person inspections can resume instead of having a virtual assessment. This pushed some of the QAs into 2021.³⁸

4.3.4 Home Energy Reports (Gas and Electric)

National Grid began offering Home Energy Reports (HER) to all residential customers in April 2013 as the first statewide behavioral program in the country and has continued the program through 2020. The Rhode Island HER program uses historical energy usage benchmarking and social comparisons to encourage energy efficient behaviors by residential customers.

The program provides emailed or mailed reports to customers containing customer-personalized energy usage information, recommendations, and links to National Grid's other residential energy efficiency programs and services. For electric customers, 12 emailed and 7 printed reports are sent, while gas customers receive 7 emailed and 4 printed reports. The goal of reports has been to generate actual energy savings by providing "tips" for reducing energy use as well as to increase demand for and participation in other residential programs offered by National Grid.

Delivery

Oracle Utilities, with offices in Arlington, Virginia, delivers the HER program using proprietary behavioral analysis and energy audit software. A Northeast team manages accounts and

³⁷ Interview with RISE Engineering, February 24, 2021

³⁸ Interview with CMC Energy Services, Inc., March 4, 2021

optimizes delivery services to clients in Rhode Island, Massachusetts, and New York. Oracle's HER service group continues to be staffed with behavioral scientists, marketing experts, engineers, and software product developers, with support staff, operating in cross-functional teams to develop and deliver Home Energy Reports across the U.S.

Impacts of COVID-19

Due to the increase amount that people were staying at home in 2020 due to the COVID-19 pandemic, there was an increase in home energy consumption. Many people were not only just staying home, but working from home and completing school from home, all of which drove an increase in home energy consumption.³⁹

Home Energy Reports removed neighbor comparison for the bulk of 2020. This removed the competitive aspect to reducing home energy consumption when so many people saw their consumption patterns change due to increased time at home. Among energy saving tips included in the reports in 2020 were some COVID-specific tips focusing on low-cost/no-cost measures.

4.3.5 Residential New Construction (Gas and Electric)

The Residential New Construction program promoted the construction of high-performing energy efficient single family, multifamily, and low-income homes in both 1- to 4-unit buildings and multifamily buildings up to five stories. To that end, it educated builders, developers, housing agencies, tradesmen, designers, and code officials regarding the construction requirements, performance benefits, and costs for such buildings. Changes driven by the Residential New Construction program improve lifecycle energy performance. This is primarily attributable to better materials selection and improved construction methods.

Delivery

National Grid continued to contract with CLEAResult to deliver the Residential New Construction program in 2020. CLEAResult provided program management, data management, and administrative support to this program out of CLEAResult's Westborough, MA, office. Staff included a program manager, senior field managers, and project managers. Field personnel provided trainings and reviewed plans submitted by builders and developers. Field staff also modeled proposed buildings and completed inspections that verified and certified that construction practices for participating buildings receiving performance ratings.

Impacts of COVID-19

The field work associated with Residential New Construction program was shut down for three months in the spring of 2020, beginning in mid-March. When field work commenced, the field staff were required to wear PPE, such as masks, and to adhere to social distancing. Because the project sites for the Residential New Construction program are uninhabited, the field work was relatively safe and there were no further COVID-19 related impacts on the program.⁴⁰

³⁹ Written communication with National Grid on March 31, 2021

⁴⁰ Interview with CLEAResult, March 1, 2021

4.3.5.1 Residential Codes and Standards Initiative (Gas and Electric)

The Codes and Standards Initiative has been the complement to the New Construction program, providing information, training, and technical support to the design and construction communities and to code officials in municipalities to increase code compliance. The Rhode Island Building Commission adopted a new energy code in 2020 resulting in additional training effort.

Delivery

National Grid contracted with CLEARResult in 2020 to lead this initiative in parallel with the Commercial New Construction program it also manages. CLEARResult coordinated and conducted residential trainings targeting HVAC contractors, architects, builders, and code enforcement officials. In addition, trainers delivered commercial classroom trainings. CLEARResult also fielded circuit riders to provide on-site technical assistance to developers and municipalities as needed.

Impacts of COVID-19

COVID-19 had no significant impact on the number of FTEs associated with the Residential Codes and Standards Initiative. The major change was that all trainings that CLEARResult facilitated were moved to virtual trainings. CLEARResult was able to make the transition to virtual trainings with no help from a third-party vendor, and it had relatively no impact on their workforce.⁴¹

4.3.6 ENERGY STAR® HVAC (Gas and Electric)

The ENERGY STAR® HVAC program promotes the installation of high efficiency gas heating and electric cooling systems to replace or displace existing, relatively inefficient equipment. The program also provided in-depth contractor training for design, installation, and testing of high efficiency systems, as well as quality installation verification training to ensure that all equipment is properly sized, installed, sealed, and performing.

Delivery

Westborough, Massachusetts-based CLEARResult delivers this program, providing training, technical support, and marketing assistance to trade allies to promote electric mini-splits and higher efficiency water heating systems. Equipment distributors are the market channel used to provide outreach to installation contractors about program objectives, requirements, and opportunities. Independent HVAC contractors installed high efficiency heating and cooling system components. The program has an open market for installation contractors, and there is a list of 70 approved contractors on the National Grid website that customers can reference.

Measures installed in this program are central HVAC units, boilers, furnaces, water heaters, and smart thermostats. Installers were plumbers, pipe fitters, electricians, and refrigeration technicians, primarily Rhode Island-based. This program also provides incentives for air source and ductless mini-split heat pumps and for converting electric resistance heating to air source

⁴¹ Interview with CLEARResult, March 1, 2021

mini split heat pumps. These incentives are largely downstream to customers and contractors, rather than up- or mid-stream to distributors or manufacturers. Several HVAC contractors received training to qualify to perform these installations through the HVAC program.⁴²

EFI handles the processing of incentive payments for HVAC incentive payments as they did starting in 2019.⁴³

Impact of COVID-19

The ENERGY STAR® HVAC program never shut down due to COVID-19 in 2020. The CLEARResult workforce transitioned to virtual trainings and virtual assessments. For HVAC equipment inspections, the program transitioned a system that enabled the field staff to do their assessment of the equipment and installations from outside the home. However, the installation contractors were unable to enter customer homes throughout the spring of 2020. This decreased the number of assessments because less equipment was being installed in the spring. Restivos' (one of the largest heat pump contractors that works on the National Grid programs in Rhode Island) number of projects picked up very quickly once its workforce was able to enter customer's homes again to do installations. This could have been due to a number of factors, such as the increased amount of time people were spending at home due to the pandemic influenced customers to invest in their homes.

CLEARResult expects the virtual trainings to continue even when the global pandemic is under control, because it has increased the efficiency of the program by eliminating travel time for the workforce. This has increased the frequency that CLEARResult is able to host trainings. However, inspections that involve technicians testing equipment will return to in person due to the limitations associated with a virtual assessment.⁴⁴

4.3.7 ENERGY STAR® Lighting (Electric)

ENERGY STAR® Lighting is a “point-of-purchase” initiative in coordination with other regional utilities. The program's strategy is to facilitate retailer discounts on lighting products that National Grid would like residential customers to purchase, resulting in instant rebates and special promotions at retail stores. A mail-order catalog and online store are also available to customers for lighting purchasing.

Delivery

TRC Companies, with an office in Marlborough, Massachusetts, supported the residential consumer lighting initiative, providing direct outreach and education to both product retailers and manufacturers. LMS works with corporate decision makers to enlist new retailers into the program. They have monthly calls with corporate trade allies and manufacturers to facilitate getting new products to retailers and assist retailers with design and set up of displays and signage in stores. The LMS staff serves utility programs in both Massachusetts and Rhode Island. Field staff worked with retailers statewide, providing product information, training them to upsell to more efficient products, offering staff events, conducting in-store surveys and point-of-

⁴² Interview with Resitvos, March 4, 2021

⁴³ Interview with CLEARResult, March 3, 2021

⁴⁴ Interview with CLEARResult, March 3, 2021

sale promotions, and helping organize school-based lighting product and power strip purchasing and distribution.

In late 2019, Boulder, CO-based Uplight took over from EFI to provide an online marketplace for National Grid to promote and supply efficient lighting and other qualified products, but EFI still conducts incentive management for the program. As the online marketplace matured in 2020, an increase in the number of FTEs associated with Uplight's workforce for the National Grid energy efficiency programs in Rhode Island increased significantly. This increase was spread across the ENERGY STAR® Lighting program, as well as the Residential Consumer Products program and the ENERGY STAR® HVAC Electric and Gas program.

4.3.8 Residential ConnectedSolutions

The Residential ConnectedSolutions reduces peak load through the use of Wi-Fi thermostats and other eligible technologies which may include batteries, lighting, water heaters, pool pumps, electric vehicles, and other devices.

Delivery

The Residential ConnectedSolutions program employed the Demand Response Management System (DRMS) EnergyHub for the program. Customers were assumed to bring their own devices to the program; therefore, there is no incremental labor assumed for program marketing or device installation.

Impacts of COVID-19

National Grid indicated there were no changes to the Residential ConnectedSolutions program due to the COVID-19 pandemic.⁴⁵

⁴⁵ Interview with National Grid on March 11, 2021

5. National Grid Employees Analysis⁴⁶

National Grid employees touch all aspects of energy efficiency programs and services provided to gas and electric customers in Rhode Island including program design, delivery, evaluation, and reporting to regulators. Some of these National Grid employees are dedicated to only Rhode Island's energy efficiency programs, and others are dedicated to energy efficiency program matters in multiple states. Still other employees are involved part-time in energy efficiency-related efforts in the context of their other National Grid responsibilities. Since National Grid employees touch many different aspects of programs, their jobs have been presented as a separate category in the analysis in Section 6.

⁴⁶ This section is adapted from the 2018 study "Analysis and Recommendations regarding the Current and Future Workforce Associated with 2018 Rhode Island Energy Efficiency Programs", accessed at <http://rieermc.ri.gov/wp-content/uploads/2020/07/2018-attachment-5-workforce-report-final.pdf>. The use of text is done with the permission of Peregrine Energy Group and National Grid.

6. Analysis of Workforce FTEs for 2020

The following sections describe the methodology and results for the analysis of the workforce FTEs for 2020.

6.1 Overview of Methodology⁴⁷

As in prior years, Guidehouse counts the workforce involved in delivering energy efficiency in full time equivalents (FTEs). This approach to measuring job impacts supports creation of benchmarks for level of effort expended and, by extension, for meaningful comparisons of counts year-to-year and program-to-program. It is also the most cost-effective way to measure and report workforce participation since alternative methods would require far more effort, such as in-depth interviews with all vendors.

Also, as in prior years, and building off of Peregrine's analytical framework, this study only counts labor as being associated with the programs if that labor meets a "but for" test, meaning that "but for" National Grid's programs, this labor would likely not occur. This is not a rigorous rule, nor is it intended to imply causality, but it is a helpful framework for considering the counting of employment associated with certain program activities. The following basic assumptions are made about classes of programs using the "but for" test:

- Retrofit programs, including C&I retrofit, and Single and Multifamily Energy Wise, and Income Eligible programs. All labor associated with these programs is counted, because these programs incentivize customers to install new, more energy efficient equipment to replace still functioning equipment. But for the energy efficiency program, the old equipment would still be in place until they failed.
- New construction programs or replace on burnout programs, including Commercial and Residential New Construction, and ENERGY STAR® Products. In these programs, the customer was planning to or needed to install new equipment and the program incentivized them to install more efficient equipment. There is an incremental cost for the equipment, but there is likely not a significant incremental impact on the labor to install the equipment.⁴⁸ For these programs, we counted costs and services associated with program management and engineering support to customers. But for the energy efficiency programs, the project would still have been installed and the program support and management costs would not have been incurred.
- ENERGY STAR® Lighting. Peregrine only counted the time associated with program management. But for the energy efficiency programs, the retailers' staff and customer's installation costs would still be incurred. The program management effort is the only incremental labor expense.

Guidehouse leveraged the same fundamental approach that it used in the 2019 study, where it used spending in 2020 as a proxy for program activity and labor expended. Underlying this

⁴⁷ When referencing the 2018 methodology, the text is adapted from the 2018 study "Analysis and Recommendations regarding the Current and Future Workforce Associated with 2018 Rhode Island Energy Efficiency Programs", accessed at <http://rieermc.ri.gov/wp-content/uploads/2020/07/2018-attachment-5-workforce-report-final.pdf>. The use of text is done with the permission of Peregrine Energy Group and National Grid.

⁴⁸ No contractors within the Residential New Construction program were interviewed, there may in fact be some incremental effort required in order to meet air sealing and duct leakage standards that has not been captured. The FTEs within this category may be slightly higher than reported.

approach is the similarity between program offerings from year to year (and in particular the fact that the 2020 program year was the third year of the 2018-2020 Least Cost Procurement Plan). Savings and the number of projects installed were also considered as the primary representation of program activity for 2020, and were examined in some cases to get a deeper understanding of program activity compared to 2019, but spending continued to be the most straightforward indicator; the other parameters have stronger associations with measure mix which could vary from year to year.

Therefore, Guidehouse developed the FTE counts for 2020 by scaling the 2019 FTE counts based on the ratio between the program spending in 2019 and the program spending in 2020.⁴⁹ This method provided consistency with the continuum of analyses that have been done over the past several years.

Multiplying the 2019 FTEs by a ratio of 2020 spending to 2019 spending was the initial step of the calculation. Guidehouse made some adjustments to 2020 spending before calculating this ratio.

- First, 2020 spending was adjusted down by 2% to account for inflation and avoid increasing FTEs because labor and materials increased in cost.
- Second, we removed costs associated with allocations to the Rhode Island Infrastructure Bank (RIIB) and Office of Energy Resources (OER) that had also been removed from the 2019 FTE analysis.

While the ratio of spending adjusted as noted in 2020 to 2019 was the foundation of Guidehouse's FTE analysis, there is not a strict linear relationship between energy efficiency spending and employment associated with the programs.

- Some program expenses are less labor intensive than others (e.g., marketing and advertising vs. weatherization services)
- Some program designs are more cost intensive than others (e.g., installing LED products for businesses through the Small Business programs vs. selling discounted LED products through distributors via the Upstream Lighting program).
- Certain energy savings measures are more complicated and laborious than others (e.g., one electrician working alone may install 15 LED ceiling fixtures in a day vs. a team of two may convert 20 streetlights to LED in a day).
- Some measure costs are more labor driven than equipment/material driven. For example, the cost of weatherization measures (e.g., cellulose for installed insulation, and caulking and foam for air sealing) is primarily labor while the cost of HVAC equipment installation is largely in the equipment cost. While these measures often require design engineering as well as field labor to install, the considerable manufacturing labor hours is not represented in program FTE counts, so the FTEs associated with each dollar spent is lower.
- Many vendors will look for ways to improve efficiency of their operations to increase productivity rather than adding staff. This is especially the case where program budget management considerations are communicated to vendors and contracts are increasingly oriented to goals achieved or installations completed.

⁴⁹ The 2019 FTE counts were calculated by adjusting, where necessary and supported by data, the FTE values developed by Peregrine in 2018. Attachment A from the 2018 report is reproduced in this report to describe, in detail, Peregrine's methodological approach.

- The extenuating circumstances caused by COVID-19 in 2020 resulted in many programs not running business-as-usual.

Because of these factors, Guidehouse adjusted the scaled numbers where necessary. The adjustments were informed by the interviews Guidehouse conducted with key vendors⁵⁰ and National Grid staff and supported by a review of savings installed in 2020. The FTE results are presented below, followed by a description of the adjustments made for each program.

Vendors and National Grid staff that were interviewed provided valuable insight to the analysis and context. Guidehouse was able to complete interviews with all vendors that it had planned to, with the exception of Energy Source, a large Project Expeditor; however, Guidehouse was able to interview two other PEXs.

When COVID-19 was declared a global pandemic in mid-March of 2020, many programs shut down to adhere to the health and safety protocols that were mandated in Rhode Island. As a result, many programs had to stop operations for approximately three months in the spring of 2020. Some programs were able to adapt to the inability to do anything in person and keep operating, but the workforce associated with some programs had to be furloughed. The majority of vendors interviewed throughout this study indicated there were no permanent job losses among their staff due to COVID-19, even if there were furloughs. Therefore, for the purposes of this study, Guidehouse used the FTEs provided by vendors for the end of 2020. This meant only permanent job losses among vendor's staff were captured, and not temporary layoffs or furloughs. Guidehouse's analysis indicates that there were enduring FTE reductions among contractors.

6.2 Summary of 2015-2020 FTEs

Table 6-1 outlines a summary of 2015 to 2020 FTEs by market sector.⁵¹ These results are an aggregate presentation of FTEs by program, which are presented in the following section. Overall, 2020 saw a 14% decrease in FTEs when compared to 2019 from 964.6 to 827.5.

⁵⁰ Programs which required additional adjustments were: Small Business Direct Install, Single Family Income Eligible Services, EnergyWise Single Family, Residential Consumer Products, EnergyWise Multifamily, Demand Response and Commercial and Industrial Multifamily.

⁵¹ 2018 to 2015 values are taken from the 2018 report with no adjustments made.

Table 6-1 Summary of FTEs (2015-2020)

	2015	2016	2017	2018	2019	2020
Electric Programs						
Commercial and Industrial	210.0	241.1	263.5	250.0	265.0	203.7
Residential Income Eligible	37.0	42.3	46.0	45.8	65.1	59.1
Residential Non-Income Eligible	125.4	104.0	98.1	168.9 ⁵²	284.8 ⁵³	263.7
Gas Programs						
Commercial and Industrial	32.0	36.1	34.4	31.9	28.7	19.8
Residential Income Eligible	43.8	41.4	36.5	39.4	56.2	38.5
Residential Non-Income Eligible	172.1	159.3	174.9	191.6	212.6	189.2
Other						
CAP Agencies ⁵⁴	34.0	38.0	35.0	35.0		
National Grid ⁵⁵	41.6	39.9	38.2	39.5	43.3	44.4
Marketing ⁵⁶					9.0 ⁵⁷	9.0
COVID-19 Training						0.3
Total	695.8	702.2	726.5	802.1	964.6	827.5

Source: Guidehouse analysis and 2018 study

6.3 FTEs and Adjustments by Program

The following section outlines FTEs by specific program. For each program, a description of any adjustments made to the FTE count, if applicable, is presented. Note that the 2020 spending has been adjusted for inflation. The RIIB and OER allocations have been removed as it was in 2019 and 2018. Table 6-3 below outlines the percentage changes from 2019 to 2020 for spending and FTEs.

As outlined in the methodology section above, the ratio of 2019 to 2020 spending was used as a basis to estimate 2020 jobs. However, certain adjustments were made to account for

⁵² The total for Residential Non-Income Eligible Electric FTEs in 2018 was incorrectly totaled from the component programs and was shown in previous reports at 170.9, when it should have been 168.9. With this correction, the total number of FTEs in 2018 is 802.1. This change has been reflected in Table 2.

⁵³ Guidehouse updated the 2019 EnergyWise and EnergyWise Multifamily FTEs based on interviews with RISE on February 24, 2021, March 2, 2021 and written communication with RISE on April 1, 2021. RISE indicated there were 224 FTEs from trade allies associated with the EnergyWise program in 2019. Guidehouse believes these FTEs were not accurately captured in 2019 and in the years prior. This has caused the significant increase in FTEs from 2018 to 2019. RISE indicated there were 20 FTEs from RISE and 15 FTEs from subcontractors associated with the gas and electric EnergyWise Multifamily program in 2019. Guidehouse adjusted the 2019 gas and electric FTEs associated with the EnergyWise Multifamily program to align with the information received from RISE in the 2021 interview. Although this re-estimation of FTEs might also be associated with analyses prior to 2019, since Guidehouse did not prepare these analyses, it did not change any FTEs associated with the EnergyWise program prior to 2019.

⁵⁴ Note that for the 2019 and 2020 analysis, CAP Agency staff were included within the Residential Income Eligible program under both Electric and Gas.

⁵⁵ In years prior to 2019 a 2,016-hour work year was assumed when calculating FTEs. National Grid changed this assumption in recent years to a 1,768-hour work year. This new assumption was implemented beginning in 2019 and resulted in a slight increase in FTEs.

⁵⁶ Beginning in 2019, marketing was contracted to a new vendor, resulting in an increase in jobs, these are therefore shown separately.

⁵⁷ In the interview with the marketing agency, Mower, on March 12, 2021, Guidehouse discovered there had been a miscommunication in the number of FTEs during the interview with Mower in 2020. Mower had provided the number of FTEs for National Grid programs across all the states the programs run in, not just Rhode Island. There was no change in the number of FTEs associated with the Rhode Island National Grid Rhode Island energy efficiency programs in 2020 when compared to 2019, so Guidehouse adjusted the 2019 value to 9 FTEs.

circumstances where that may not have been appropriate. These adjustments are outlined by program in the sections following Table 6-2 and Table 6-3. Adjustments were applied to both the electric and gas components of the respective program.

Table 6-2 Table 6-2 outlines FTEs for both 2019 and 2020. Since spending was heavily relied upon to derive 2020 counts, the spending by program for both years is also presented. Note that the 2020 spending has been adjusted for inflation. The RIIB and OER allocations have been removed as it was in 2019 and 2018. Table 6-3 below outlines the percentage changes from 2019 to 2020 for spending and FTEs.

As outlined in the methodology section above, the ratio of 2019 to 2020 spending was used as a basis to estimate 2020 jobs. However, certain adjustments were made to account for circumstances where that may not have been appropriate. These adjustments are outlined by program in the sections following Table 6-2 and Table 6-3. Adjustments were applied to both the electric and gas components of the respective program.

Table 6-2 FTEs and Spend by Program (2019-2020)

	2019 Spend	2019 FTEs	2020 Spend ⁵⁸	2020 FTEs
Electric Programs				
Commercial & Industrial (C&I)		265.0		203.7
Large Commercial New Construction	\$6,360,691	1.1	\$6,092,151	1.0
Large Commercial Retrofit	\$26,774,706	220.3	\$21,058,081	171.3
Small Business Direct Install	\$7,774,107	36.4	\$7,214,273	22.5
Commercial ConnectedSolutions	\$1,826,320	7.3	\$2,235,798	8.9
Other	\$15,435	0.0	\$577	0.0
Low-Income		65.1		59.1
Single Family Income Eligible Services	\$9,440,815	32.4	\$5,737,161	34.2
Income Eligible Multifamily	\$2,907,368	13.4	\$1,191,810	5.5
CAP Agencies Staff		19.4		19.4
Residential		284.8		263.7
EnergyWise	\$15,747,807	179.3 ⁵⁹	\$14,829,676	147.2
Residential Consumer Products	\$2,437,586	8.9	\$2,151,302	10.4
EnergyWise Multifamily	\$1,189,404	24.5 ⁶⁰	\$1,488,781	14.0
Home Energy Reports	\$2,512,231	2.5	\$2,110,791	2.5
Residential New Construction	\$863,236	2.8	\$910,885	3.0
ENERGY STAR® HVAC	\$2,427,970	63.4	\$3,231,652	84.4
ENERGY STAR® Lighting	\$13,340,861	3.0	\$8,706,886	2.0
Residential ConnectedSolutions	\$167,428	0.3	\$547,700	0.3
Other	\$41,300	0.0	\$127,911	0.0
Natural Gas Programs				
Commercial & Industrial (C&I)		28.7		19.8
Large Commercial New Construction	\$2,768,494	0.9	\$2,620,106	0.8
Small Business Direct Install	\$91,873	0.7	\$128,906	0.4
Large Commercial Retrofit	\$4,794,177	22.3	\$2,912,996	13.6
Commercial & Industrial Multifamily	\$977,413	4.8	\$320,512	5.0
Other	\$51,229	0.0		0.0
Low-Income		56.2		38.5
Single Family Income Eligible Services	\$3,691,134	23.4	\$2,139,996	12.8
Income Eligible Multifamily	\$3,093,076	16.1	\$1,736,671	9.0
CAP Agency Staff		16.6		16.6
Residential		212.6		189.2
ENERGY STAR® HVAC	\$2,350,813	80.4	\$2,418,905	82.7
EnergyWise	\$9,109,589	118.8 ⁵⁹	\$8,576,679	97.4
EnergyWise Multifamily	\$1,002,083	10.5 ⁶⁰	\$634,124	6.0
Home Energy Reports	\$411,843	0.5	\$352,253	0.5
Residential New Construction	\$598,085	2.4	\$419,675	2.6
Other		0.0		0.0
Other				
National Grid Staff		43.3		44.4
Marketing		9.0 ⁶¹		9.0
COVID-19 Training		0		0.3
Total		964.6		827.5

Source: Guidehouse analysis

⁵⁸ 2020 spending has been adjusted for inflation; values shown are in 2018 dollars, assuming an inflation rate of 2% per year.

⁵⁹ RISE indicated in an interview on March 1, 2021 that there were 72.5 RISE FTEs associated with the EnergyWISE program in 2019. On April 1, 2021, RISE indicated in written communication there are 224 contractor FTEs associated with the EnergyWise program in 2019. The 2019 FTE values were updated to reflect this new information, and the FTEs were split between the gas and electric program based on the 60% electric to 40% gas ratio provided in the interview.

Table 6-3 Percentage Increase from 2019 to 2020 by Program

	Percentage Change in Spending	Percentage Change in FTEs ⁶²
Electric Programs		
Commercial & Industrial (C&I)		
Large Commercial New Construction	-4%	-4%
Large Commercial Retrofit	-21%	-22%
Small Business Direct Install	-7%	-38%
Commercial ConnectedSolutions	22%	23%
Other	-96%	-96%
Low-Income		
Single Family Income Eligible Services	-39%	6%
Income Eligible Multifamily	-59%	-59%
CAP Agencies Staff		0%
Residential		
EnergyWise	-6%	-18%
Residential Consumer Products	-12%	17%
EnergyWise Multifamily	25%	-43%
Home Energy Reports	-16%	0%
Residential New Construction	6%	6%
ENERGY STAR® HVAC	33%	33%
ENERGY STAR® Lighting	-35%	-35%
Residential ConnectedSolutions	227%	0%
Other	210%	0%
Natural Gas Programs		
Commercial & Industrial (C&I)		
Large Commercial New Construction	-5%	-5%
Small Business Direct Install	40%	-43%
Large Commercial Retrofit	-39%	-39%
Commercial & Industrial Multifamily	-67%	4%
Other	-100%	0%
Low-Income		
Single Family Income Eligible Services	-42%	-46%
Income Eligible Multifamily	-44%	-44%
CAP Agency Staff		0%
Residential		
ENERGY STAR® HVAC	3%	3%
EnergyWise	-6%	-18%
EnergyWise Multifamily	-37%	-43%
Home Energy Reports	-14%	0%
Residential New Construction	-30%	10%
Other		0%

Source: Guidehouse analysis

⁶⁰ RISE indicated in an interview on February 24, 2021 that the 2019 EnergyWise Multifamily FTEs associated with the program equaled 20 FTEs from RISE and 15 FTEs from contractors, across both the electric and gas programs. The 2019 FTE values were updated to reflect this new information, and the 35 FTEs were split between the gas and electric program based on spending.

⁶¹ Mower indicated that there were 9 FTEs associated with the Rhode Island program in 2019 and 2020; therefore, Guidehouse updated the 2019 FTEs associated with marketing to reflect this information.

⁶² Note where the % increase in spending is not equal to the % increase in FTEs, an explanation by program is found in the sections to follow.

6.3.1 Small Business Direct Install

RISE indicated that there were 16 FTEs associated the Small Business Direct Install Program (Gas and Electric) in Rhode Island. Since RISE is only responsible for servicing approximately 70%⁶³ of the Small Business Direct Install customers, Guidehouse scaled the 16 FTEs up to account for the other 30% of the market, which is serviced by CDO. This resulted in 22.5 FTEs, and Guidehouse distributed the 22.5 FTEs across the gas and electric sides of the program based on the 2020 program spending ratio.⁶⁴

6.3.2 Single Family Income Eligible Services

CLEAResult indicated there were 3 CLEAResult FTEs associated with the Single Family Income Eligible Services program in Rhode Island in 2020, in addition to 20 weatherization contractors, 19 heating contractors and 5 specialty contractors. Guidehouse split the 47 FTEs across the gas and electric sides of the program based on the 2020 spending ratio.⁶⁵

6.3.3 EnergyWise

In 2020, National Grid increased the incentives for weatherization from 75% to 100%. This was done to encourage participation in the program despite the COVID-19 pandemic. This led to a smaller decrease in program spending than otherwise would have occurred due to COVID-19. Since Guidehouse manually adjusted the FTEs associated with the EnergyWise program based on information from an interview with RISE, there was no need to make any adjustments to the program spending due to this increased incentive.

RISE indicated there were 61.5 RISE FTEs associated with the EnergyWise program in Rhode Island in 2020. The trade allies associated with the program in 2020 totaled 252 FTEs. RISE indicated that the FTEs associated with the trade allies in 2019 totaled approximately 311 and the RISE FTEs totaled 72.5.

Interviews with both RISE and CLEAResult indicated that the FTEs associated with the trade allies spend approximately 10% of their time on the Residential New Construction program⁶⁶ and the other 90% of their time on the EnergyWise program. Additionally, RISE estimated that 80% of the trade allies' FTE time is spent in RI, and the other 20% is spent in MA.⁶⁷ Therefore, Guidehouse arrived at the FTEs for the EnergyWise program by adding 72% (90% multiplied by 80%) of the 252 FTEs associated with the trade allies (i.e., 181.4) to the 61.5 FTEs from RISE and 1.75 FTEs associated with the QA inspections. Guidehouse split the FTEs across the gas and electric programs based on the percent of projects provided by RISE that are electric versus gas (i.e., 60% electric projects vs. 40% gas projects).⁶⁸ The result is 147.2 FTEs for the electric program and 97.4 FTEs for the gas program. Because contractor labor for new

⁶³ Interview with National Grid, February 16, 2021

⁶⁴ Interview with RISE, February 24, 2021

⁶⁵ Interview with CLEAResult, February 24, 2021

⁶⁶ Due to the "but for" test, Guidehouse did not include the 10% of the 324 trade ally FTEs in the Residential New Construction FTE count.

⁶⁷ Written communication with RISE, April 1, 2021

⁶⁸ Interview with RISE, March 2, 2021

construction is assumed to occur regardless of the program, their labor split is not added to the New Construction program FTEs.

Guidehouse adjusted to the 2019 FTE values across the gas and electric programs to reflect the information provided by RISE in 2020 and calculated the 2019 FTE values using the same method as the 2020 FTEs. This resulted in 179.3 FTEs for electric and 118.8 FTEs for gas for EnergyWise in 2019.

6.3.4 Residential Consumer Products

The online marketplace that Uplight took over in late 2019 did not have any impact on the 2019 FTE count because the program was so new. However, in 2020 this program matured and the 10⁶⁹ FTEs associated with Uplight were allocated to the Residential Consumer Products, ENERGY STAR® Lighting and ENERGY STAR® HVAC based on 2020 program spend ratios.

Guidehouse believes that prior to 2020, the ARCA FTEs associated with the Refrigerator, Freezer and Dehumidifier Recycling program did not capture the FTEs required to pick up the appliances at customer home and transport them to the Franklin recycling center in MA. In addition to the 5.1 FTEs that make up the Franklin recycling center workers, as well as the administrative, account management and call center jobs, 4 FTEs are dedicated to picking up appliances and transporting them to the Franklin recycling center and are included in the 2020 FTE count.⁷⁰

6.3.5 EnergyWise Multifamily

In 2020, National Grid increased the incentives for weatherization from 75% to 100%. This was done to encourage participation in the program despite the COVID-19 pandemic. This led to an increase in program spending than otherwise would not have occurred due to COVID-19. Since Guidehouse manually adjusted the FTEs associated with the EnergyWise program based on information from an interview with RISE, there was no need to make any adjustments to the program spending due to this increased incentive.

RISE indicated a significant decrease of FTEs that work on the EnergyWise Multifamily program in 2020, when compared to 2019. In 2019, there were 20 RISE FTEs that worked on the EnergyWise program, but in 2020 that had decreased down to 14 FTEs. Similarly, in 2019 there were 15 FTE weatherization contractors that worked on the program and in 2020 this decreased to 6 FTEs. Guidehouse split the 20 FTEs between the gas and electric programs based on the 2020 spending ratio.

6.3.6 Home Energy Reports

The Home Energy Reports program is not dependent on spending the way other programs are. It is based on volume. The volume of home energy reports in 2020 was relatively consistent with the volume of reports in 2019; therefore, Guidehouse held the 2020 FTEs constant at the 2019 value.

⁶⁹ Interview with Uplight, March 9, 2021

⁷⁰ Interview with ARCA, March 1, 2021

6.3.7 Residential ConnectedSolutions

Based on an interview with Paul Wassink of National Grid, Guidehouse confirmed that the increase in spending on the Residential ConnectedSolutions program was because of an increase in incentives, mostly due to the Daily Dispatch option and was not labor related. Therefore, Guidehouse held the Residential ConnectedSolutions FTE count for 2020 constant at the 2019 value.⁷¹

6.3.8 Commercial and Industrial Multifamily

RISE indicated that there were no changes in the FTEs that worked on the Commercial and Industrial Multifamily program in 2020 when compared to 2019. Therefore, Guidehouse did not scale FTEs based on the 2019 to 2020 spending ratio, but instead held constant at 5 FTEs.⁷²

6.3.9 National Grid Employees

In 2020, National Grid FTEs were reported using data provided by National Grid. National Grid report 78,467 employee hours relating to Rhode Island Energy Efficiency work. This amounted to 44.4 FTEs. This an increase of 1,861 hours compared to 2019 National Grid employee hours relating to Rhode Island Energy Efficiency work, which amounted to about a 1 FTE increase. This assumed a 1,768-hour work year to be consistent with the hours used in calculating FTEs for other workforce members. Note that this assumption differs from years prior to 2019 reporting, where a 2,016-hour work year was assumed.

6.3.10 Marketing and Customer Outreach

Marketing FTEs were reported based on a vendor interview with Mower. In 2019, Mower reported 36,200 payroll hours, amounting to 20.5 FTEs, again assuming a 1,768-hour work year. Guidehouse recognized this is a large increase from the 3.7 FTEs reported for Marketing in 2018. After discussions with National Grid, the 2018 FTE reported value seems to understate the effort within this service, however, the 2019 reported value seemed to overstate them. Therefore, the average of the two - 12.1 FTEs - was used for Marketing in 2019.

During the interview with Mower in 2021, Guidehouse confirmed there was a miscommunication between Mower and Guidehouse during the previous year's interview. Mower had reported the payroll hours associated with all National Grid Energy Efficiency work, across multiple states, not just Rhode Island. Guidehouse confirmed that there are only 9 FTEs associated with the Energy Efficiency work in Rhode Island specifically, and there was no change in the 2019 FTEs (i.e., if not for the miscommunication, there would have been 9 FTEs in 2019 as well).

Included in this category are the FTEs associated with Comprehensive Marketing because its impact flows to many programs.

⁷¹ National Grid interview, March 11, 2021

⁷² Interview with RISE, March 3, 2021

6.3.11 COVID-19 Training

Since this was the first year PPE protocols were needed due to a global pandemic, Guidehouse did not scale Environmental Health and Engineering FTEs based on spending. Instead, Guidehouse leveraged information received through an interview with the vendor, who reported 0.3 FTEs associated with the Rhode Island Energy Efficiency programs in 2020.

6.3.12 Rebate Processing, EERMC Consultants and Evaluation

Jobs relating to rebate processing, EERMC consultants and evaluation were calculated using distributions within these categories from 2019 using the following procedure. Once the scaling for all programs was complete, the column “Market/Program Totals with Support Services Allocations” in Table 6-4 FTEs by Job Function in 2020 below was populated, combining values for programs that have both gas and electric components. From there, the jobs were distributed across the three “Direct Service Providers” columns based on the distributions in the 2019 report. For example, if “Third Party Program Admin & Mgmt” jobs represented 10% of all EnergyWise FTEs in 2019, this percentage was applied to the 2020 total EnergyWise FTE value to determine how many FTEs fell into the “Third Party Program Admin & Mgmt” category. Because the support services jobs were embedded in the total program FTEs in 2019 and not associated with a particular program, the sum of the “Direct Services Providers” columns is not necessarily equal to the total amount of program jobs. This leaves a certain number of “leftover” jobs that belong within the “Support Services Providers” columns. Since the marketing jobs and the COVID-19 training jobs were already known based on interviews, these can be removed from the “leftovers.” Therefore, the remaining jobs can be distributed across Rebate Processing, EERMC Consultants, and Evaluation. This is done using the ratio of jobs in each category from 2019. For example, if Rebate Processing accounted for 35% of jobs within the 3 remaining categories, 35% of the “leftover” jobs were assigned to Rebate Processing. This process continues for all of Rebate Processing, EERMC Consultants, and Evaluation. Spending for 2020 was then compared to 2019 to ensure the number of jobs assigned was reasonable.

6.4 FTEs by Job Function

Table 6-4 provides a more in-depth breakout of the workforce, providing additional detail regarding the specific functions of jobs associated with markets and programs and the level of effort they contribute.

Table 6-4 FTEs by Job Function in 2020

Markets and Programs	Market/Program Totals with Support Services Allocations	Direct Services Providers			Support Services Providers				
		Third Party Program Admin & Mgmt	Auditors/Installers, Technical Support, QA Inspections	Installations by Vendors & Trades	Rebate Processing	Marketing	COVID-19 Training	EERMC Consultants	Evaluation
Residential Programs	452.9				4.0	9.0	0.3	2.8	4.6
EnergyWise	244.6	24.7	63.7	152.0					
ENERGY STAR® HVAC	167.1	1.1	0.0	166.0					
EnergyWise Multifamily	20.0	3.0	4.4	12.2					
Residential New Construction	5.6	1.4	3.8	0.0					
Residential Home Energy Report	3.0	2.9	0.0	0.0					
Residential Connected Solutions	0.3	0.1	0.1	0.0					
ENERGY STAR® Lighting/Appliances	12.4	1.8	10.6	0.0					
Income-Eligible Programs	97.5								
Income Eligible Single Family	47.0	2.3	0.0	43.1					
Income Eligible Multi Family	14.5	2.7	5.0	6.6					
Community Action Agency Staff	36.0	0.0	36.0	0.0					
Commercial Programs and Initiatives	223.4								
C&I Small Business	28.0	11.0	5.3	11.6					
C&I Large Commercial Retrofit Electric	141.5	0.0	2.0	139.0					
C&I Upstream Lighting/HVAC*	19.4	6.1	0.0	12.8					
C&I Tech Support*	0.8	0.0	0.0	0.8					
Industrial Energy & Energy Smart Grocer*	4.4	2.2	0.0	2.2					
C&I Multifamily	5.0	0.5	0.0	1.6					
C&I New Construction	1.9	0.6	1.3	0.0					
Commercial Connected Solutions	8.9	4.5	4.5	0.0					
C&I Large Commercial Retrofit Gas	13.6	0.2	2.2	10.8					
National Grid Staff	44.4								
Total				827.5					

Source: Guidehouse analysis

*Note that these are not official programs but are initiatives. They are included separately for added details and to stay consistent with previous report

7. Counterfactual 2020 FTEs

2020 was a unique year due the global pandemic caused by COVID-19. In mid-March, many programs were shut down for two to three months due to the stay-at-home protocols in Rhode Island. When the programs did resume in the summer, there were extra safety precautions that needed to be taken and many programs had to make significant adjustments to the way they were run for them to be safe during the pandemic. This included transitioning to work from home for much of the workforce associated with the Rhode Island Energy Efficiency programs and virtual communications in the place of face-to-face interactions wherever possible. Due to this disruption in business as usual, Guidehouse completed a “counterfactual FTE” scenario to assess the impacts of COVID-19 across all programs. To determine the impacts of COVID-19, Guidehouse compared the 2020 counterfactual FTEs with the actual 2020 FTEs which were determined from the methodology outlined above.

Counterfactual FTEs were calculated by multiplying the ratio of 2020 planned spending to 2019 planned spending by the actual FTEs in 2019. This method is based on the premise that actual program activity would have scaled according to plan, as indicated by the ratio of budgeted funds. Implicit in this assumption is that actual expenditures relative to plan in 2020 would have been similar to 2019; on this basis, everything can be scaled according to plan.

Guidehouse also asked vendors throughout the interviews, “Had it not been for COVID-19, what do you think the FTEs in 2020 would have been?” Not all vendors were able to answer this question, as it is difficult to know what would have happened in some programs had it not been for COVID-19. However, interviewees for three programs (i.e., Large Commercial Retrofit, Commercial and Industrial Multifamily and Residential New Construction) stated that COVID-19 had no impact on the number of FTEs associated with the program. The COVID-19 pandemic may have had a less significant impact on these programs because the sites that the workforce visit to complete their work were mostly uninhabited or, in the case of C&I Multifamily, dependent on the particular buildings to which field staff was granted access. Guidehouse did not make any adjustments to counterfactual FTEs based on responses to that question, because vendors did not provide information as to whether FTEs would have increased had it not been for COVID-19⁷³. Therefore, no concrete conclusions could be drawn from the interviews that could have resulted in manual adjustments made to the counterfactual FTEs.

This section assesses the impact COVID-19 had on FTEs across the Rhode Island Energy Efficiency programs by comparing the counterfactual FTEs to the actual FTEs for 2020, as shown in the section above. **Error! Not a valid bookmark self-reference.** and **Error! Reference source not found.** below display the results of Guidehouse’s counterfactual FTE analysis, as well as the percent decrease between the counterfactual 2020 FTEs and the actual 2020 FTEs. The analysis shows that, if not for the pandemic, FTEs would have increased by about 2% relative to 2019.

⁷³ Also, in the case of Large Commercial Retrofit, Guidehouse could not determine whether the interviewed vendors’ response to the counterfactual question were indicative of the experience across the entire program.

Table 7-1. FTEs and Spend by Program (2019-2020)⁷⁴

	2019 Planned Spend	2019 Actual FTEs	2020 Planned Spend	2020 Counterfactual FTEs	% Change in FTEs (2020 Counterfactual to 2020 Actual) ⁷⁵
Electric Programs					
Commercial & Industrial (C&I)		265.0		280.1	
Large Commercial New Construction	\$4,937,396	1.1	\$5,128,542	1.1	-8%
Large Commercial Retrofit	\$20,937,767	220.3	\$22,877,085	240.7	-29%
Small Business Direct Install	\$8,541,961	36.4	\$7,274,700	31.0	-28%
Commercial ConnectedSolutions	\$1,984,446	7.3	\$1,997,770	7.3	22%
Other	\$39,350	0.0	\$63,527	0.0	0%
Low-Income		65.1		68.0	
Single Family Income Eligible Services	\$11,465,420	32.4	\$12,347,279	34.9	-2%
Income Eligible Multifamily	\$3,316,572	13.4	\$3,411,194	13.7	-60%
CAP Agencies Staff		19.4		19.4	0%
Residential		284.8		271.8	
EnergyWise	\$15,468,138	179.3	\$15,010,741	174.0	-15%
Residential Consumer Products	\$2,082,843	8.9	\$2,113,768	9.0	15%
EnergyWise Multifamily	\$3,004,776	24.5	\$2,695,445	22.0	-36%
Home Energy Reports	\$2,589,408	2.5	\$2,622,149	2.6	-1%
Residential New Construction	\$841,796	2.8	\$935,653	3.1	-5%
ENERGY STAR® HVAC	\$2,670,547 ⁷⁶	63.4	\$2,427,072	57.6	46%
ENERGY STAR® Lighting	\$14,674,729	3.0	\$14,778,749	3.0	-35%
Residential ConnectedSolutions	\$277,559	0.3	\$443,702	0.4	-37%
Other	\$158,346	0.0	\$234,414	0.0	-15%
Natural Gas Programs					
Commercial & Industrial (C&I)		28.7		31.6	53%
Large Commercial New Construction	\$4,131,337	0.9	\$2,549,583	0.5	-42%
Small Business Direct Install	\$122,006	0.7	\$120,153	0.7	-47%
Large Commercial Retrofit	\$4,131,337	22.3	\$4,699,230	25.4	1%
Commercial & Industrial Multifamily	\$900,363	4.8	\$930,350	5.0	0%
Other		0.0			
Low-Income		56.2		60.1	
Single Family Income Eligible Services	\$4,914,551	23.4	\$5,721,192	27.3	-53%
Income Eligible Multifamily	\$2,875,190	16.1	\$2,892,629	16.2	-44%
CAP Agency Staff		16.6		16.6	
Residential		212.6		221.3	
ENERGY STAR® HVAC	\$2,122,453	80.4	\$2,588,487	98.0	-16%
EnergyWise	\$8,300,249	118.8	\$7,792,797	111.6	-13%
EnergyWise Multifamily	\$1,644,631	10.5	\$1,453,343	9.2	-35%
Home Energy Reports	\$439,121	0.5	\$453,200	0.5	-3%
Residential New Construction	\$723,171	2.4	\$596,390	2.0	33%
Other		0.0		0.0	
Other					
National Grid Staff		43.3		44.38	0%
Marketing		9.0		9.0	0%
COVID-19 Training		0.0		0.0	
Total		964.6		986.2	

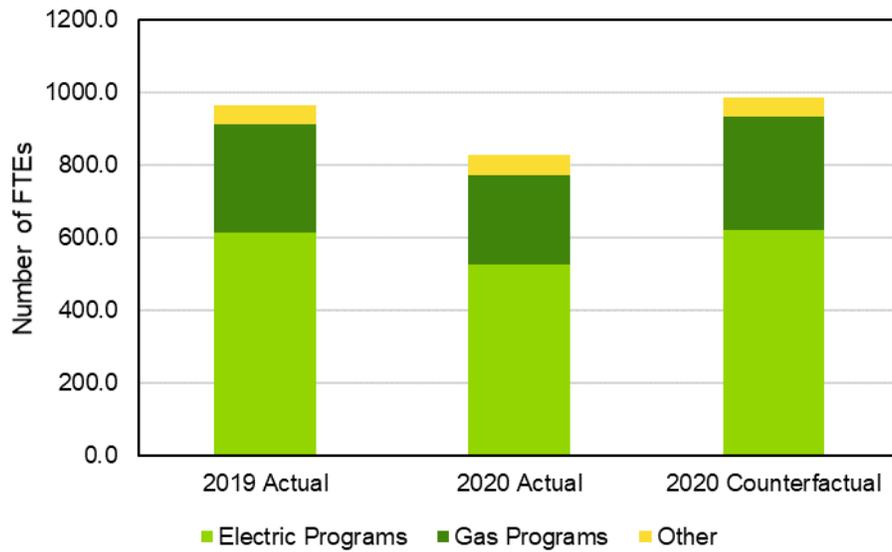
Source: Guidehouse analysis

⁷⁴ 2020 and 2019 spending has been adjusted for inflation; values shown are in 2018 dollars, assuming an inflation rate of 2% per year.

⁷⁵ Note where the % increase is zero the interviews with vendors revealed that COVID-19 had no impact on the number of FTEs associated with the Energy Efficiency Program in Rhode Island.

⁷⁶ For the 2019 report, HEAT loan spending was removed from the ENERGY STAR® HVAC program. For the purposes of the counterfactual analysis, HEAT loan spending was included in the 2019 planned spending.

Figure 7-1 2019 and 2020 Actual FTEs Compared to 2020 Counterfactual FTEs



8. Qualitative Findings and Observations

Through the interview process, several qualitative findings and observations were made, these are summarized in this section. Guidehouse notes that our interviews confirmed our basic approach of scaling 2019 FTEs by spending and making adjustments based on interview findings. 2020 is the third year of energy efficiency implementation under the 2018-2020 Least Cost Procurement Plan. However, it is possible that this hybrid approach, along with the accounting of changed program elements such as the marketplace, could be applicable for a 2021 study.

The following observations are ones that were brought up in several interviews and have been aggregated here; some of these are comments about the status of the program delivery effort and do not necessarily impact FTEs. The observations that were stated in the 2019 report re-occurred as themes in the 2020 interviews, so they were re-stated in this report.

- Quicker access to National Grid data from vendors. Vendors stated that some receive data once a month but would prefer to receive data more often. If data is received once a month, and action needs to be taken to correct issues from the previous month, they find they are already delayed.⁷⁷
- As the workforce gets older, there is an opportunity to develop a new skill set. Vendors noted a shift away from non-network lighting measures and a need for more mechanical contractors. For example, it was noted that there is a lack of refrigeration contractors who can execute National Grid programs.⁷⁷
- Sooner decisions regarding program plans would enable better vendor planning and workforce management. Vendors noted that final decisions are occasionally made very close to the program launch date which does not leave them enough time to execute.⁷⁷ For example, when the HEAT Loan rebate was cancelled in January of 2020, some heat pump contractors indicated they were unaware of the cancellation until it happened.
- More coherent communication between the implementation and strategy groups at National Grid would result in more effective direction to vendors and, ultimately, better run programs. Some vendors indicated that they perceive communication challenges internally at National Grid, between who makes decisions and who implements changes that impacts them.
- Despite the challenges presented in 2020 due to COVID-19, the programs were able to adapt to the new reality of a global pandemic. For example, the majority of programs were able to transition to virtual trainings and audits instead of doing things face to face. Though the actual FTEs were not as high in 2020 as the counterfactual case, across all programs not as many FTEs were lost as expected due to COVID-19. Most of the loss of FTEs came from the contractors and not the program managers.

The following observations are ones that were specific to the vendor interviewee's program. For many of the programs, all of 2020 was focused primarily on dealing with the impacts that COVID-19 had on the programs; therefore, there were less details discussed regarding regular program changes throughout the interviews. Many vendors reported that no COVID-19 cases were identified as resulting from transmission between the workforce and customers. Please see section 4 for further discussion on the impacts that COVID-19 had on the programs. Note

⁷⁷ This is an observation that was also observed in the 2019 interviews.

that interviews were not conducted with vendors in every program, so the observations below are not comprehensive.

8.1 Industrial Initiative⁷⁸

- Leidos noted that, in 2020, there was an increase in Industrial New Construction and an increase in performance lighting activities.
- Leidos noted that it is difficult for them to staff their team because they operate on thin margins, yet the skill set required to provide a credible resource for the industrial projects is expensive.

8.2 Upstream Lighting Initiative⁷⁹

- Throughout 2020, spiff promotions were run to promote lighting products. For example, for every lighting product sold by distributors that had controls, the sales individual who sold it would earn \$5.00. CLEARResult issued reward cards to the sales individual for these sales.
- This increased the amount of work required for the distributors, because they had to track who was selling each item. Additionally, this created more work for the CLEARResult team, as they had to distribute incentives.

8.3 Income Eligible Single Family Program⁸⁰

- CLEARResult noted that there was a loss of senior staff at some of the agencies. This meant that experienced auditors were replaced with new staff who required training. This additional training effort slowed down their progress.⁸¹
- CLEARResult had planned to implement a new training program that would show new employees the different avenues they could take for career progression. This would result in higher workforce retention, improved communication and improved internal documentation to streamline employee development. However, due to COVID-19, CLEARResult had to focus its efforts elsewhere in 2020. Instead, they plan to implement this new training program in 2021.

8.4 ENERGY STAR® HVAC⁸²

- CLEARResult noted that the cancellation of National Grid's heat pump initiative led to a decrease in heat pump installations in 2020.
- Restivos, one of the largest heat pump contractors in the program, indicated that when the heat pump program was cancelled in early 2020, it decided not to bring on the new hires it had planned to because it expected to see a significant decrease in business.

⁷⁸ Interview with Leidos, March 3, 2021

⁷⁹ Interview with CLEARResult, March 4, 2021

⁸⁰ Interview with CLEARResult, March 2, 2021

⁸¹ Interview with CLEARResult, February 24, 2021

⁸² Interview with CLEARResult, March 3, 2021

However, despite the cancellation of the heat pump initiative, they still completed more projects in Rhode Island in 2020 when compared to 2019, and it was a record year for the company. Restivos did bring on new employees at the end of 2020 to meet the demand of their business.⁸³

8.5 EnergyWise⁸⁴

- RISE noted that there were no program changes in 2020 that did not relate to the COVID-19 pandemic.
- Had it not been for COVID-19, RISE expects that they would have increased their workforce.
- RISE noted hesitation in the contractor community in 2020 to increase their crews to meet the fluctuating incentives and demand throughout the year. This was because they were unsure if the work would continue. However, at the time of the interview with RISE, they indicated there was significant program backlog and contractors had the confidence to begin growing their businesses again.

8.6 EnergyWise Multifamily⁸⁵

- RISE did not note any changes that occurred in the EnergyWise Multifamily program that were not a direct result of COVID-19.

8.7 Appliance Recycling Initiative⁸⁶

Similar to RISE, ARCA did not note any program changes that occurred other than those directly related to COVID-19.

⁸³ Interview with Restivos, March 4, 2021

⁸⁴ Interview with RISE Engineering, March 2, 2021

⁸⁵ Interview with RISE Engineering, February 24, 2021

⁸⁶ Interview with ARCA, March 1, 2021

Appendix A. Methodologies Used for Assessing Employment⁸⁷

Peregrine has used a consistent calculation of FTE employees in this study to provide a definable and comparable measure of job impacts. The number of individual employees associated with National Grid Programs in Rhode Island well exceeds total FTEs reported. This was confirmed by interviews with companies who provide support services or manage programs for National Grid and by our analysis of field installation of individual program measures. Individuals who perform this work may be full-time or part-time employees, may work solely in Rhode Island or divide their time between Rhode Island utility programs and utility programs in other states, or may be engaged both in energy efficiency activity and other work for which their trade licenses qualify them. FTE counts are determined based on: reports from employers of actual Rhode Island hours tracked; from allocations of total labor hours to Rhode Island using relative numbers of Rhode Island customers served by a team vs. customers in other states, primarily Massachusetts; or using unit counts of installed materials (e.g., a particular lighting fixture) or number of projects completed (e.g., a residential home weatherization) installed to calculate total labor hours.

For non-installation roles, many companies interviewed told Peregrine that they employed multiple individuals with specialized skills or in discrete roles that were necessary and important to delivering a comprehensive, high quality product or service. However, only a portion of each employee's total annual hours might be attributable to Rhode Island energy activity.

For unit installed-based calculations, totals for individual items installed are converted into hours or days by applying the average per unit installation labor time and then converted total hours into FTEs by dividing by 1,760⁸⁸ hours or 220 days per FTE year. Similarly, specific types of work completed, such a weatherization job or heating system installation, are assigned an average labor time for an installation crew, and counts are multiplied by the time for each to generate total days or hours and an FTE number.

Some examples:

- Engineers providing technical support to customers. National Grid's Large Commercial and Industrial customer base in Rhode Island is relatively small, the call for engineering support is very intermittent, the engineering expertise that different customers need varies. Rather than retaining engineers with a variety of skills to be available to assist Rhode Island customers, National Grid has entered into master services agreements with multiple consulting engineering firms from whom expert engineering can be purchased as needed. However, since business economics necessitate that these consulting engineering firms' keep their staff utilized and billable most of the time, the majority of preferred engineering firms do other work. Some, like RISE Engineering, provide similar energy engineering services to multiple utility programs, in multiple states, to utility and non-utility clients, or to a combination of these.

⁸⁷ This section is reproduced from pages 53-55 and Attachment A of the 2018 report.

⁸⁸ Guidehouse used 1,768 hours in its analysis, consistent with information provided by National Grid.

- Firms that manage programs targeting specific customer sub-sectors and offer market-specialized technical services in multiple utility jurisdictions. The Energy Smart Grocer program delivered by CLEAResult and the Industrial program delivered by Leidos, Inc. exemplify this dynamic in the commercial market. Both companies are headquartered outside of New England, but they have local offices in Westborough and Framingham, Massachusetts, respectively. Both have field staff that spent a portion of their time helping National Grid customers in Rhode Island, but supported many more such projects for utility customers in Massachusetts. The firms dispatch staff, as required, to advance individual projects in Rhode Island, but they could not cost effectively deliver this program to Rhode Island alone, given the size of the target market in the state. For both programs, the customers select the contractors they prefer to do the installations.
- Programs targeting regional retailers. The contractors delivering the residential ENERGY STAR® Lighting and Appliance programs (TRC Companies) or the commercial Upstream Lighting program (CLEAResult) and Upstream HVAC program (Energy Solutions) work with and mobilize regional distributors and retailers to stock and promote energy efficient products preferred by utilities. National Grid and other utilities, covering both Rhode Island and Massachusetts, have recognized that using a single contractor to manage this effort across multiple territories creates programmatic benefits and economies of scale. Time spent supporting Rhode Island programs is allocated out of the total staff deployed, which may include individuals dedicated wholly or in part to Rhode Island.
- National Grid's Rhode Island team. National Grid itself reported 79,566 employee hours billed against Rhode Island energy efficiency program-related accounts, equal to 39.5FTE employees. Those hours and that FTE count represent not only the aggregate contributions of Rhode Island-dedicated employees, but also employees with system-wide or similar other-state responsibilities who contributed fractionally to the Rhode Island FTE total.
- RISE Engineering, based in Cranston, Rhode Island. RISE has been a partner to National Grid in Rhode Island since the inception of energy efficiency programs over 30 years ago. Today, RISE is the lead vendor for or a major participant in many of the largest programs offered in Rhode Island by National Grid, including EnergyWise Single Family, EnergyWise Multifamily, Small Business Direct Install, Large Commercial and Industrial Retrofit, and the Commercial and Industrial Gas programs. For the complex, labor intensive, high volume, EnergyWise Single Family program, RISE's total FTE counts and the number of individual personnel contributing to the program are nearly equal. The large customer volume of EnergyWise Single Family enables RISE to employ full-time staff to serve in specific program roles, such as auditors, installers, and inspectors. This creates stability and consistency that benefits customers, National Grid as well. Further, similarities between staffing needs across multiple programs, e.g., for engineering, materials handling, or accounting, have allowed RISE to pool staff to provide higher levels of utilization and improved staffing economies. Additionally, similarities in technical needs between programs, e.g., for electricians, allowed RISE to employ a baseline number of full-time technical specialists, but then supplement them on an as needed basis with sub-contracted assistance. Having this capacity has, in turn, enabled RISE to be a major player as a Project Expediter supporting National Grid's Large Commercial Retrofit program, generating business opportunities, managing more complex installations, securing equipment and materials, and providing or contracting for installation labor. And, at the same time, as new business opportunities have emerged

and been secured in neighboring states, RISE has been able to grow further, shifting specialized staff back and forth between states as demand for services dictates, while maintaining or increasing the efficiency of staff utilization and improving labor economics.

Peregrine has made a conscious effort to use consistent methodologies to count jobs year-to-year as it has undertaken studies for National Grid of the workforce associated with energy efficiency programs. Our goal has been to maximize the potential for apples to apples comparisons of total jobs and program specific workforce jobs. Further, we believe the methodologies we have used are conservative in their counting and generally understate the employment impacts of National Grid programs.

A.1 Program Support Service Providers

A.1.1 National Grid

National Grid provided to Peregrine a summary of billed hours for employees involved with individual energy efficiency programs in Rhode Island in 2018. Responsibilities of these employees included program planning and development, program administration, regulatory affairs, marketing, evaluation, and market research. Peregrine is reporting National Grid FTEs as a separate category for purposes of this study and not allocating them to specific programs or groups of programs.

A.1.2 Support Services Contractors

Peregrine interviewed most of the larger contractors who supported National Grid in these activities, and they described their roles and responsibilities and provided counts and hours for employees supporting National Grid in Rhode Island. The FTEs Peregrine is reporting often represent the aggregation of small numbers of hours worked by many employees. Often, this was because the contractor's role required contributions from many members of a multi-disciplinary team. Depending on the nature of the services provided and whether the support role could be associated with specific programs, time of these contractors is assigned to programs according to the overall allocation of gas and electric spend by program sector (Residential, Residential Income Eligible, Commercial and Industrial), or allocated to a specific program sector.

A.1.3 Direct Service Providers

Employee numbers reported by Direct Service Providers was a primary input to FTE counts. Peregrine interviewed the major contractors directly engaged by National Grid to support or deliver Rhode Island programs to get information about type, number, and responsibilities of personnel employed. Some of these contractors provided the same services in 2018 to National Grid customers in multiple states and in some cases to multiple utilities, often using the same team of employees. Peregrine relied on their informal calculations of allocations of time to Rhode Island when formally reported hours from timecards were not available.

Where employer-sourced information on employment was not available, Peregrine relied on program records and statistics for 2018 installations to calculate person-hours, person-days, and ultimately annual full-time equivalent field staff. Peregrine used totals for individual energy efficiency measures installed or, in some cases, total dollar value of categories of projects completed in 2018 to calculate FTEs. Depending on the information available, Peregrine would multiply the average time required (in person-hours or person-days) for each installation by the number of installations and converting the result to FTEs based on an assumed 1,760 work hours per year or 220 workdays per year. These unit-based installation times were secured from representative installation companies that performed this work or from organizations that supervised installation activity. In other cases where the only information available was total project cost, Peregrine would estimate the labor cost component of projects and determine total hours required for installations using average hourly billing rates, again converting those total hours into annual FTEs. Finally, in cases where major employers could provide actual installer hours of work to Peregrine, those actual hours or days of work were used instead of calculated FTEs.

Again, central to these calculation methodologies is an effort to use the same approach year-on-year for individual programs.

A.2 Residential Programs

A.2.1 EnergyWise 1 – 4 Unit Residential Program

For the EnergyWise Residential program, RISE Engineering's program manager provided to Peregrine an overview of how the program functions and any changes from 2016, as well as updated FTE counts of RISE employees in various roles based on payroll tracking. Peregrine then allocated this total number of FTEs to gas and electric programs, using the relative size of National Grid electric and gas budgets as the basis for these allocations.

In 2014, RISE had shared general rules of thumb with Peregrine concerning how weatherization contractor crews and heating contractors perform site work. These typical installation scenarios were borne out by direct interviews with installation companies, as well as by interviews with Community Action Program supervisors with similar responsibilities for low-income residential services. Peregrine has continued to use these rules of thumb for 2018 to estimate numbers of FTE insulation and heating system contractor personnel that installed major energy efficiency measures.

Peregrine assumes it takes a weatherization crew made up of three insulation specialists an average of two days to complete an insulation and air sealing job. National Grid provided counts of numbers of weatherization jobs completed in 2018. Peregrine then used the total numbers of insulation jobs and the average number of man-days required for each installation to calculate a total number of FTEs (again, assuming work 220 days per person per year) providing insulation services in 1-4 unit buildings. FTEs were marked up by 20% to account for a contractor's support and management staff.

For heating system installations, we assume that it takes a two-person team four days on average to remove and replace a hydronic heating system. Peregrine secured counts of high

efficiency heating systems and related equipment installed in 2018 from Hawk Incentives, which processes the incentives paid out for these installations. Since Peregrine had received differentiated counts for replacements furnaces and boilers, Peregrine assigned less installation time to replacement furnaces (due to less piping work) and adjusted time estimates accordingly. Replacement residential gas equipment was allocated to the gas program and any replacement residential oil or propane heating equipment or electric heat pump installations were treated as an expense of the electric program. We multiplied average total hours required for an installation by the total number of items installed. The total number of calculated hours was then divided by 1,760 hours to convert it to FTEs, and the FTEs were marked up by 20% to account for a contractor's support and management staff.

A.2.2 EnergyWise Multifamily Residential Program

As with the EnergyWise 1-4 Unit Residential Program, Peregrine interviewed RISE's program manager and was provided with staffing counts. In addition to general program supervision, responsibilities included technical leadership, auditing, field coordination and inspections, and electrical installation work. Again, RISE was able to convert staff counts to FTEs associated with this particular program. Peregrine relied on installation counts from National Grid to determine numbers of individual measures that had been installed by independent weatherization contractors and heating contractors in these buildings. As was the case for contractors installing measures in 1 to 4 unit buildings, these counts were multiplied by average times for installations in hours or portions of hours, and the resulting total hour counts were divided by 1,760 hours per FTE to arrive at annual FTE counts.

A.2.3 Rhode Island Heating and Cooling Program

The Heating and Cooling Program serves as the umbrella for high efficiency heating, cooling, and water heating. In some respects, it is a distributor and contractor installation program that encourages these market channel participants to promote high efficiency heating and cooling equipment (e.g., condensing gas boilers and furnaces, ductless and ducted heat pumps for air conditioning, high efficiency central air conditioners, smart thermostats) to their respective customers, and passes on National Grid rebates to customers for installation of approved equipment. Installation contractors submitted rebate applications on behalf of their customers to rebate processors Blackhawk and Energy Federation who processed reimbursement checks.

FTE counts for program management were developed from staff counts and allocations provided by the program manager to Peregrine. Total FTEs were then allocated to gas or electric based on the ratio of spending gas and electric programs.

Counts of installation FTEs were generated using installed equipment counts provided by National Grid based on rebates provided. These counts were then used to calculate total hours or days of installation time required and converted to FTEs.

A.2.4 Residential New Construction, Residential Codes and Standards, Residential Home Energy Report Program

For each of these programs, there was no significant incremental labor impact associated with product installed or purchased because the program did not so much affect whether product was installed as it did which product was installed. Peregrine generated FTE counts through interviews with contractors that facilitated these programs and provided support services (e.g., marketing assistance, informational mailings, technical assistance, trade ally training, quality assurance inspections). These businesses provided staffing counts from their accounting records. Total FTEs were then allocated to gas or electric based on the ratio of spending in each residential gas and electric program.

A.2.5 ENERGY STAR® Lighting, ENERGY STAR® Products

Both of these programs were funded solely through the residential electric budget. For both programs, there was no significant incremental labor impact associated with amount of product installed or purchased. Further, retailers' staff engaged at the point-of-sale were not counted as incremental FTEs. Peregrine generated FTE counts through interviews with individual contractors engaged by National Grid to supply services in support of the programs. These businesses provided staffing counts for 2018 from their accounting records. Total FTEs were then allocated to the residential electric spend.

A.3 Low Income Residential Programs

A.3.1 Income Eligible 1-4 Unit Residential

FTE counts for this program for 2018 include program management staff by the program vendor CLEARResult, Community Action Program (CAP) agency staff counts, and calculated labor required to complete installations. CLEARResult staff FTE counts came from direct interviews with CLEARResult's program manager. We determined CAP agency energy staffing for each of the six agencies operating in Rhode Island with the assistance of CLEARResult and then aggregated them to establish the statewide CAP Agency staff count. CLEARResult also provided counts of weatherization and heating system installations completed in 2018. Peregrine used CAP agencies guidance on contractor crew sizes and installation practices to calculate the numbers of FTE installers who performed this work.

A.3.2 Income Eligible Multifamily Residential

Peregrine used the same approach to calculating FTEs for the Income Eligible Multifamily program as for the EnergyWise Multifamily Residential Program since both programs were administered by RISE Engineering and used the same delivery strategy.

A.4 Commercial and Industrial Programs

A.4.1 Small Business Direct Install Program

Peregrine used counts of employees provided by RISE Engineering, the regional program administrator, to generate FTEs for RISE staff involved in program management and measure installations and for their sub-contractors as well. No actual measure counts and calculated FTEs were used to compile job counts attributable to the work of RISE and its subcontractors,

as all workers were accounted for without a piecework analysis. Peregrine also calculated additional FTEs associated with the “customer-directed option” (or “CDO”) that allowed customers to use an electrician they had an existing relationship with to install program measures and receive the same incentives as were available through RISE. These numbers were based on information from RISE about numbers of electrical contractors that were active through CDO and the numbers of customers they work with and then cross-tabulated installation time that would be required for actual items installed.

A.4.2 Large Commercial Retrofit Program (Electric)

Installations

As described in the section on energy program delivery, the Large Commercial Retrofit program was the most market-based of all electric programs offered. Customers initiated projects, as did businesses that had products or services they were trying to sell. Installations included prescriptive lighting, motors and drives, compressors, and HVAC control measures. FTEs for installation work was calculated in a number of ways, depending on which information and how much information was available to Peregrine in the data sets supplied by National Grid. For prescriptive Large Commercial Retrofit installations that were part of a specific technology group (e.g., lighting, drives), Peregrine used installed item counts to generate total installation times or total project cost to generate labor cost estimates and converted this information to FTEs. For larger, more complex custom projects, National Grid helped disaggregate total project costs into costs for sub-categories by technology. Installation labor ratios of FTEs associated with non-custom installations of specific equipment and total project costs were applied to total costs of custom measure sub-categories. Once the total dollar value of the project was determined, we could apply assumptions about the ratios of labor cost to material cost for different technologies, calculate the type and number of labor hours this represented, aggregate the total hours, and convert them to FTEs.

Sales and project management

As in past years, Peregrine interviewed the larger Project Expeditors to get counts of sales and project management staff they were employing in 2018 to secure and oversee projects. Similarly, Peregrine estimated the number of sales and project management personnel that were employed by other installation contractors active in Large Commercial Retrofits. We extrapolated the sales and project management staffing identified for Project Expeditors to calculate numbers of like staff employed by other installation contractors. This extrapolation used the total dollar value of Large Commercial retrofit projects installed by PEX and by other contractors under to estimate the additional sales and project management staff employed by these other installation contractors.

Engineering support

For engineering support services provided to commercial customers, Peregrine used the recorded payouts for technical assistance services provided in 2018 to calculate workforce FTEs. National Grid provided engineering services to customers through retained contractors, in particular where energy efficiency solutions required technical support to determine what could be done, what should be done, what energy savings would result, and what incentive levels

were appropriate. To calculate the FTEs associated with technical assistance support provided by engineers under contract to National Grid, Peregrine took the total dollars paid out for this work and calculated how many hours of labor it represented at an assumed \$120 per hour. Total hours were then converted to FTEs. Finally, for the Smart Grocer and Industrial initiatives, Peregrine interviewed and secured staff counts from CLEAResult and Leidos Engineering.

A.4.3 Upstream Lighting, Upstream HVAC

As in other programs where National Grid and other utilities had engaged a shared contractor to promote and manage like programs in multiple states, Peregrine secured counts of contractor staff from program managers, calculated FTEs, and allocated a portion of them to Rhode Island.

Upstream Lighting-related sales counts were rolled into the Large Commercial Retrofit counts. Peregrine calculated the FTEs required for installation of equipment that required an electrical contractor to wire it by code, taking counts of product, applying per unit labor times, and then calculating the total FTEs for installations. Peregrine did not include any stand-alone lamps sold by Upstream lighting in its FTE calculations because Peregrine could not determine with certainty if they had been installed by the customer or an installation contractor. Upstream HVAC sales counts were reviewed and considered but ultimately not included in total counts. Numbers were relatively small and were in many cases attributed to equipment failures where no incremental labor was needed.

A.4.4 Commercial and Industrial Gas Programs

For Commercial and Industrial Gas programs Peregrine interviewed RISE to secure counts of RISE employees and FTEs. RISE management time attributed to the program was reduced for 2018 because National Grid internalized much of this role leaving RISE to do engineering and Small Business gas installations.

A variety of contractors installed energy efficiency measures under the Large Custom Retrofit program. Due to a lack of specific details about the cost of these projects, Peregrine relied on statistics about incentives levels paid to develop order of magnitude estimates of total project costs for labor and equipment and then conservatively calculated hours of installation labor and total FTEs assuming an average labor rate of \$100/hour.

Appendix B. Interview Guides

B.1 Vendor Interview Guide

New Program Interviewee	Program Interviewed Last Year
Your Organization	Your Organization
Tell us a little bit about your company's role in National Grid Energy Efficiency programs.	Has anything changed about your company's role in National Grid Energy Efficiency programs since 2019?
What is your estimate of the number of FTEs who worked on <i>[insert applicable RI EE program]</i> in 2020? Note that the number of FTEs may be less than the number of employees – an FTE is the number of full-time equivalent employees (i.e. 2 part time would make 1 FTE). [This should be a count of actual FTEs not their estimate without COVID – make sure to clarify]	What is your estimate of the number of FTEs who worked on <i>[insert applicable RI EE program]</i> in 2020? Note that the number of FTEs may be less than the number of employees – an FTE is the number of full-time equivalent employees (i.e. 2 part time would make 1 FTE). [This should be a count of actual FTEs not their estimate without COVID – make sure to clarify]
What is the breakdown of the FTEs working on the programs in 2020? For example, the number of FTEs working on administrative activities, number of FTEs working as project managers, etc.	What is the breakdown of the FTEs working on the programs in 2020? For example, the number of FTEs working on administrative activities, number of FTEs working as project managers, etc.
Compare 2019 to 2020	Compare 2019 to 2020
How do the number of FTEs for <i>[insert applicable RI EE program]</i> compare to 2019? An estimated % change is sufficient.	How do the number of FTEs for <i>[insert applicable RI EE program]</i> compare to 2019? An estimated % change is sufficient
If it weren't for COVID, what do you think the number of FTEs would have been in 2020? [Prompt to confirm if increase or decrease in FTEs was as a result of COVID-19, if necessary.]	Based on your prior response of <i>[insert number of 2020 FTEs from answer to previous question]</i> FTEs in 2020, an <i>[insert increase or decrease]</i> was observed from the number of FTEs in 2019. If it weren't for COVID, what do you think the number of FTEs would have been in 2020? [Prompt to confirm if increase or decrease in FTEs was as a result of COVID-19, if necessary.]
Were subcontractors/installation contractors used in 2020? If yes, what was the number of FTEs of subcontractors/installation contractors?	[If subcontractors/installation contractors used last year] Was there a change in the number of FTEs of subcontractors/installation contractors from 2019? An estimated % change is sufficient.
[If answer to previous question was yes] How do the number of FTEs for subcontractors/installation contractors compare to 2019? An estimated % change is sufficient.	[If subcontractors/installation contractors not used last year] In last year's study you indicated there was no use of subcontractors/installation contractors in 2019. Did this change in 2020? If yes, what was the number of FTEs for subcontractors/installation contractors?

New Program Interviewee	Program Interviewed Last Year
Is the number of projects equal to the number of customers served? [If no] How does the number of customers served through <i>[insert applicable RI EE program]</i> in 2020 compare to 2019? An estimated % change is sufficient.	Is the number of projects equal to the number of customers served? [If no] How does the number of customers served through <i>[insert applicable RI EE program]</i> in 2020 compare to 2019? An estimated % change is sufficient.
How did COVID impact the <i>[insert "increase" or "decrease"]</i> in customers served in 2020 compared to 2019? [Looking for a qualitative answer.]	How did COVID impact the <i>[insert "increase" or "decrease"]</i> in customers served in 2020 compared to 2019? [Looking for a qualitative answer.]
Were there any COVID related program changes in 2020 relative to 2019 that affected your workforce? If so, what were those changes and how did they affect your workforce?	Were there any COVID related program changes in 2020 relative to 2019 that affected your workforce? If so, what were those changes and how did they affect your workforce?
Were there any non-COVID related program changes in 2020 relative to 2019 that affected your workforce? If so, what were those changes and how did they affect your workforce?	Were there any non-COVID related program changes in 2020 relative to 2019 that affected your workforce? If so, what were those changes and how did they affect your workforce?
Business Process	Business Process
How does your company acquire EE customers in RI?	Have there been any changes to how your company acquires EE customers in RI since 2019?
How do you attract and retain workforce to support programs?	Have there been any changes to how your company attracts and retains workforce to support programs since 2019?
Does your company provide training to the workforce? If so, how do you provide necessary training to workforce? (Question focuses on identification of needs, training process and frequency)	<i>[If provided training in 2019]</i> Have there been any changes to how your company provides training to the workforce since 2019? <i>[If did not provide training in 2019]</i> In 2020, did your company provide training to the workforce? If so, how do you provide necessary training to the workforce? (Question focuses on identification of needs, training process and frequency)
Additional Comments	Additional Comments
Are there any changes related to the way National Grid supports your workforce that you would recommend to National Grid? If so, what are those recommendations and what impact do you think they would have?	Are there any changes related to the way National Grid supports your workforce that you would recommend to National Grid? If so, what are those recommendations and what impact do you think they would have?
Does National Grid communicate relevant programmatic, policy, or strategy changes to your company? What, if anything, can the company do to improve its communication?	Does National Grid communicate relevant programmatic, policy, or strategy changes to your company? What, if anything, can the company do to improve its communication?

New Program Interviewee	Program Interviewed Last Year
Any other comments related to these questions?	Any other comments related to these questions?
Interviewee-Specific	Interviewee-Specific
<i>Questions based on National Grid interview observations</i>	

B.2 National Grid Interview Guide

Question 1: Program Changes

What significant program changes have occurred from the 2019 to the 2020 energy efficiency programs in Rhode Island that may have had a significant impact on the jobs associated with these programs?

Prompt if needed: We are looking specifically for programmatic changes that have had significant impacts on jobs beyond those that might be reflected in scaling the number of FTE jobs.

Question 2: COVID

What feedback or information have you received from vendors or program managers regarding the impact of COVID on the employment/workforce environment in Rhode Island in 2020? (For example, maybe the number of FTEs is steady but does it take 50% longer to do insulation work because of all the precautions that they need to take.)

Added prompt: For the vendors you work with or are aware of, are there specific COVID-related impacts that we should be sensitive to as we interview them?

Question 3: Other Feedback

What other feedback or information have you received from vendors or program managers regarding the employment/way of doing work in Rhode Island in 2020, either in general or as a result of programmatic changes?

Question 4: Other Workforce Drivers

Other than what vendors have told you, have you become independently aware of any changes in 2020 in the employment/workforce environment in Rhode Island compared to previous years?

Question 5: Programs in Transition

What is National Grid in RI doing to make up the gap in savings from the transition away from lighting and what impact, if any, has this had on the jobs associated with energy efficiency programs?

What other measure mix changes have the programs experienced in 2020 going into 2021?

Appendix C. Participating Companies

The following list includes contractors and subcontractors performing work directly for National Grid Energy Efficiency programs in 2020 that were counted in the FTE analysis and additional companies who assisted customers to secure equipment rebates, for example through the New Construction, High Efficiency HVAC programs, and upstream lighting. The list also includes the Community Action Program agencies and their subcontractors involved with the delivery of the low-income program, whether under National Grid funding or WAP/LIHEAP/ARRA funding. The list is organized by state, with companies then listed alphabetically. Rhode Island firms are listed first. Of the 1,093 companies, agencies, contractors and sub-contractors listed here, 73% are either headquartered in Rhode Island or have a physical presence in Rhode Island. 19% are Massachusetts-based companies with no physical presence in Rhode Island. 3% of companies are Connecticut firms. The remaining firms have offices in the other New England states or outside of New England. The list is organized with Rhode Island first, then other states in alphabetical order. Within each state, the firms are listed alphabetically.

Table 8-1. List of 2020 Companies, Agencies, Contractors and Sub-Contractors that Worked on the National Grid Energy Efficiency Programs

Vendor	City	State
210 Plumbing	Portsmouth	RI
3GB LLC	Riverside	RI
A & L Plumbing	Westerly	RI
A. Perry Plumbing & Heating	Coventry	RI
A&I Electric	Pawtucket	RI
A Santurri Electric	East Greenwich	RI
A E Costa Electrical Contractor LLC	Warwick	RI
A/C Burner Service	East Providence	RI
A-1 Plumbing & Drain Cleaning	Pawtucket	RI
Accu Electric	Providence	RI
Acorn Oil	Pawtucket	RI
ACR Construction & Management Corp	North Providence	RI
Cardin, Adam	Burrillville	RI
ADERO	Cranston	RI
Adler Bros. Development	Smithfield	RI
Advance Electrical Corporation	Providence	RI
Advanced Comfort Systems Inc.	North Smithfield	RI
Advanced Heating & Cooling	Greenville	RI
Aero Mechanical Inc.	Roxbury Crossing	RI
Affordable Building & Weatherization, Inc.	Cumberland	RI
Affordable Heating & Air Conditioning Services	North Providence	RI
Affordable Insulation, Inc.	Providence	RI
Air Flow Inc.	Coventry	RI
Air Metalworks Ltd.	Carolina	RI

Vendor	City	State
Air Quality LLC	Cranston	RI
Air Synergy LLC	Providence	RI
Air Tech Pro HVAC	Cranston	RI
Air Temp	Riverside	RI
Airhart Electric Inc.	Coventry	RI
Larocci, Al	Warwick	RI
Al Swajian & Son	Cranston	RI
Ala & Sons Construction	Warwick	RI
Alan Menard Plumbing LLC	Pawtucket	RI
Alan Paul Electric	Warwick	RI
All Electrical Solutions	Providence	RI
All Phase Heating & Cooling	Coventry	RI
All Star Insulation	Providence	RI
Allen Engineering	Warwick	RI
Alliance HVAC	Cumberland	RI
Alpha & Omega Homes	Cumberland	RI
Alpha Mechanical	East Providence	RI
Al's Electric	North Providence	RI
AM Electric LLC	Warwick	RI
Amaral, Paul	Tiverton	RI
Amazon	Barrington	RI
American Heating,Plumbing,& Sprinkler,Inc.	North Providence	RI
American Home Heating & Air Conditioning	Cranston	RI
American Pride Plumbing & Heating LLC	Warwick	RI
Anchor Insulation Inc.	Pawtucket	RI
Anchor Plumbing & Heating	Providence	RI
Anderson Energy Solutions LLC	Charlestown	RI
Andrade & Co LLC	North Providence	RI
Andy's Overhead Electric LLC	Exeter	RI
Anibal J. Cante	Central Falls	RI
Anthony Januario Heating	Bristol	RI
Anything Plumbing & Heating Service	Harrisville	RI
Apple Valley Alarms	North Scituate	RI
Apuzzo Plumbing & Heating	North Scituate	RI
Aquidneck Services LLC	Taunton	RI
AR Heating & Cooling Inc.	Central Falls	RI
Arden Engineering Constructors, LLC	Pawtucket	RI
Ardente Supply Co. Inc.	Providence	RI
Armor Insulation	Pawtucket	RI
Arther Lettieri	Providence	RI

Vendor	City	State
Arthur W. Adler	Bristol	RI
Aten Energy	Providence	RI
Atlantic Plumbing & Heating Supply	Coventry	RI
Atlantic Power Services Inc.	Pawtucket	RI
ATLANTIS CoMFORT SYSTEMS	West Warwick	RI
Atlas Insulation	North Scituate	RI
ATMS Electrical Services	East Providence	RI
Audet, E.W. & Sons Inc.	Providence	RI
Audet, Robert F. Inc.	East Greenwich	RI
Aussant Electric	Cumberland	RI
Autiello Plumbing & Heating	Cranston	RI
Automatic Temperature Controls	Cranston	RI
Automatic Heating Equipment	Providence	RI
AZ Corporation	Hopkinton	RI
B & B Consumers Natural Gas Service & Air Conditioning	Woonsocket	RI
B & J Matzner	Warwick	RI
B & K Electric, LLC	Warwick	RI
B & M Plumbing	Warwick	RI
B Martel Plumbing & Heating	Central Falls	RI
B Z Electric	West Warwick	RI
B&D Boiler Removal	Pawtucket	RI
B&W Building Maintenance Electrical Contractors	Providence	RI
B. LaChapelle Home Improvements LLC	Lincoln	RI
Bard Plumbing & Heating	Warwick	RI
Barlow Heating LLC	Warwick	RI
Barrett Plumbing & Heating Inc.	West Greenwich	RI
Barrington Plumbing & Heating Inc.	Barrington	RI
Baum Energy	Warren	RI
Bayside Electric Company	Warwick	RI
Beauchemin Design	North Smithfield	RI
Belcher Electric LLC	Warwick	RI
Beneficial Energy	Pawtucket	RI
Benjamin Jenkins DbA	Middletown	RI
Berard Heating & HVAC	Warwick	RI
Bertrand Plumbing Inc.	Pascoag	RI
Bileau HVAC Inc.	Woonsocket	RI
Bill The Plumber	Smithfield	RI
Bill's Direct Plumbing & Heating	Bristol	RI
Bill's Heating Service Inc.	Warwick	RI
Bisono Construction	Providence	RI

Vendor	City	State
Blackstone Valley Community Action	Pawtucket	RI
Blanco, Owen	Warwick	RI
BLH Realty	Warwick	RI
BMB Services LLC	Cranston	RI
Bobby Hopkins	Exeter	RI
Bodell Plumbing & Heating	South Kingstown	RI
Boss Heating	Westerly	RI
Boucher HVAC/R Inc	Wakefield	RI
Brandon Schiano Plumbing & Heating	Cranston	RI
Braswell's Plumbing & Heating	North Kingstown	RI
Brian Mellor	Warren	RI
Brien Godin	Cumberland	RI
Brittain Electric Inc.	Jamestown	RI
Brock's Electric	Johnston	RI
Broway Electric, LLC	Cranston	RI
Bruno & Son Electric Inc.	North Providence	RI
Buckley Heating & Cooling	Middletown	RI
Burbank's Plumbing & Heating Inc.	North Kingstown	RI
Butler & Sons Plumbing & Heating	Cranston	RI
C & L Energy Corp	Cranston	RI
C. Caswell Plumbing	Jamestown	RI
C.J. Nemes Inc. Plumbing & Heating	Woonsocket	RI
Cal Supply Company, Inc.	Cranston	RI
Calson Corporation	Johnston	RI
Calyx Retrofit	Lincoln	RI
CAM HVAC & Construction Inc.	Smithfield	RI
CARJON Air Conditioning & Heating Inc.	Smithfield	RI
Carlino Electric	Coventry	RI
Casey's Oil & Propane	Portsmouth	RI
Casperson Construction	Johnston	RI
Cassana HVAC LLC	Johnston	RI
Cavaco Brothers Plumbing & Heating	East Providence	RI
CD Heating, Inc.	Cranston	RI
Century Heating	Smithfield	RI
Century Sheet Metal, Inc.	Riverside	RI
CFC Electrical Contracting Inc.	Providence	RI
Charette Plumbing LLC	Richmond	RI
Charland Enterprises	Pawtucket	RI
Charles Doherty & Steve Girard	Warwick	RI
Charter Plumbing & Heating Co	Warren	RI

Vendor	City	State
Chilabato, Peter	Portsmouth	RI
Chris Cardillo Electrician	Providence	RI
Chris Electric, Ltd.	Newport	RI
Cinco Plumbing & Heating	Coventry	RI
CJ's Plumbing & Heating Specialists	Smithfield	RI
CK Plumbing & Heating	Pawtucket	RI
Clearesult	Providence	RI
Clermont Mechanical Plumbing	Glendale	RI
Cleverly Plumbing LLC	Greene	RI
CMA Heating & AIR	East Providence	RI
CMAGS HVAC	Warwick	RI
Coastal HVAC	Wakefield	RI
Cohen Heating Supply Inc.	Providence	RI
Collard Enterprises	Coventry	RI
Comfort Systems	West Kingston	RI
Community Action Partnership of Providence	Providence	RI
Competitive Chimney Sweep Inc.	Woonsocket	RI
Complete Construction Inc.	Providence	RI
Comprehensive Community Action	Cranston	RI
Condon, James	Tiverton	RI
Connolly and Sons Heating Services	Harmony	RI
Consolidated Maintenance	Johnston	RI
Consumers Propane, Bousquet Oil	Woonsocket	RI
Continental Engineering Inc.	Johnston	RI
Control Systems	Cranston	RI
Cordeiro, Nathan	Portsmouth	RI
Costa, Dave	East Providence	RI
Cross Insulation	Cumberland	RI
Cruz Remodeling & Construction Co	Providence	RI
Crystal Plumbing & Heating	Providence	RI
CS Plumbing & Heating	Warwick	RI
CSV Mechanical	South Kingstown	RI
Custom Comfort	Cumberland	RI
Custom Plumbing & Heating Co	Newport	RI
Cutler H. Besser & Sons	Scituate	RI
CW Cummings Plumbing Co.	Coventry	RI
D & D Electric Company	East Greenwich	RI
D & E Electric, Inc.	Warwick	RI
Dave Fortier (D & Z Electric)	Woonsocket	RI
D Gomes Electric LLC	Pawtucket	RI

Vendor	City	State
D P Electric	Cumberland	RI
D&D Electric	Cranston	RI
D&S Construction Co	Lincoln	RI
D&V Mechanical Inc.	Westerly	RI
D.F.S. Plumbing Services	Cranston	RI
D.S. Plumbing	Quincy	RI
Danico LLC	North Providence	RI
Dante Gonzales	Providence	RI
Dauphinais Electrical Services LLC	Woonsocket	RI
David A. Ciancio, Jr., Inc.	Scituate	RI
David R. Gince Electrician	Woonsocket	RI
David Parrillo Plumbing, Heating & Son LLC	Hope	RI
David Phillips Plumbing & Heating	Riverside	RI
David Seddon Electrician	Rumford	RI
David St. Angelo	Barrington	RI
Dayco Electric	Warwick	RI
DCI Construction	Cumberland	RI
Delmonico Enterprises, Inc.	Cranston	RI
Delta Electro Power Inc.	Cranston	RI
Delta Mechanical Contractors	Pawtucket	RI
Dennis Decorpo Electric	Scituate	RI
Dennis Pratt Plumbing & Heating	Harrisville	RI
Derek DeCosta	Riverside	RI
Derek Germain	Cumberland	RI
Desmarais Plumbing & Heating Inc.	Johnston	RI
Dessaint Electric Co.	Warwick	RI
Devivo Plumbing & Heating	North Smithfield	RI
Dimery, Robert W. Db	Barrington	RI
Diorio, Joseph	Pawtucket	RI
DIROCCO Plumbing ServiceS LLC	North Providence	RI
Divona Enterpries	Cranston	RI
DJL Electric	Warren	RI
Dominic Mazza Construction	Pawtucket	RI
Done Right	North Providence	RI
Donovan & Sons	Middletown	RI
DP'S Plumbing & Heating	Scituate	RI
Driver's Plumbing & Mechanical	Providence	RI
DSC Heating & Air Conditioning	North Kingstown	RI
DSL & Sons Heating & Cooling Inc.	Bradford	RI
Dual Voltage Electric	Johnston	RI

Vendor	City	State
Dudek Oil	Warren	RI
Dumais Plumbing & Remodeling Inc.	Slatersville	RI
Dupuis Oil Co.	Pawtucket	RI
Duran Electric	Lincoln	RI
Durante Electric	Lincoln	RI
DWI Electrical Group	Johnston	RI
Dynamic Air Systems Inc.	East Providence	RI
E. A. Marcoux & Son Inc.	Woonsocket	RI
Eagle Design Corp	Middletown	RI
East Coast Electric	South Kingstown	RI
Eastbay Community Action	Riverside	RI
Eastern Plumbing & Heating	Providence	RI
Ecologic Spray Foam Insulation Inc.	Tiverton	RI
Econ Electric Contractors	Bristol	RI
Economy Air Inc.	Exeter	RI
Ed Sylvia Plumbing	Narragansett	RI
Eddys Weatherization	Providence	RI
Edward Martino	Johnston	RI
Edward Silvia	Middletown	RI
Eirich Electric Inc.	Portsmouth	RI
Electrical Concepts Inc	East Greenwich	RI
Electrical Construction Specialists LLC	Middletown	RI
Electrical Wholesaler Inc.	Cranston	RI
Electro-Tec Systems Inc	Lincoln	RI
Elite Heating & Cooling LLC	Pawtucket	RI
Emerald Services	Foster	RI
Emergency Response Service	Providence	RI
Energy Conservation Inc.	South Kingstown	RI
Energy Efficient Exteriors, Inc.	Pawtucket	RI
Energy Electric, Inc.	Woonsocket	RI
Energy Geeks	North Smithfield	RI
Energy One	West Warwick	RI
Energy Source LLC	Providence	RI
EP Electric	East Providence	RI
Erban Plumbing	Warwick	RI
Eric R. Krause Electrician	Cranston	RI
Eric Tyler Electrician	Charlestown	RI
Esmond Electric	Smithfield	RI
Eurotech Climate Systems LLC	Pawtucket	RI
Evergreen Plumbing & Heating	Warwick	RI

Vendor	City	State
F & S Electric Inc.	Bristol	RI
Falcon Electric	Pawtucket	RI
Falcone, Arthur P	Hope Valley	RI
Feather HVAC	Cumberland	RI
Feula Plumbing & Heating	Johnston	RI
Figliozzi Plumbing & Heating	Peace Dale	RI
Fiore & Sons LLC	Warwick	RI
Five Star Mechanical	Richmond	RI
Fleet Plumbing & Heating Inc.	North Scituate	RI
Flint Audio Video	Middletown	RI
Flou HVAC	Charlestown	RI
FM Bodington Plumbing & Heating Inc.	Little Compton	RI
Fox & Delomba Heating, Air Conditioning & Plumbing	Riverside	RI
Francis Heating & Hydronics	East Providence	RI
Frank Lombardo & Sons	Providence	RI
Fred Manupelli Plumbing & Heating	Johnston	RI
Frontier Mechanical	Providence	RI
Furtado Lighting & Design LLC	Bristol	RI
G. Gagnon Electric & Sons Ltd	Cumberland	RI
G.M. Perron & Son Plumbing & Heating	North Smithfield	RI
Gallo Electric	West Greenwich	RI
Gambit Electric	Johnston	RI
Gary Fernandes Electrician	Woonsocket	RI
Gary Ficca Electrician	North Smithfield	RI
Gas Doctor	Providence	RI
Gatta Electric	Cranston	RI
Gerald M Lepore Jr.	Cranston	RI
Giorno Plumbing & Heating	Cranston	RI
GKT Refrigeration	Pawtucket	RI
Glenn Smith Construction LLC	Middletown	RI
Globex Industries Inc.	Narragansett	RI
Gomes Heating & Cooling	North Kingston	RI
Gordon Building & Excavating Inc.	Hope Valley	RI
Graham Builders	Smithfield	RI
Gravel Electric Inc.	Harrisville	RI
GreanSeal Insulation	North Kingston	RI
Greenwich Insulation	West Greenwich	RI
Greg Blanchette	North Smithfield	RI
Greg Brown	Smithfield	RI
Griff Electric LLC	Portsmouth	RI

Vendor	City	State
Gross, Carl	Providence	RI
Guarino Power Systems LLC	Smithfield	RI
Guy Clemont Plumbing & Heating	Cranston	RI
H&R Electric Contractors Inc.	Greenville	RI
Harris Plumbing & Heating Inc.	Narragansett	RI
Hawkes Plumbing & Heating Co. Inc.	Fiskdale	RI
Heavenly Homes	Cranston	RI
Henderson Electric	Pawtucket	RI
Henderson, Paul	Warwick	RI
Hilario A. Quezada Electrician	Providence	RI
Hill Electrical Services	Pascoag	RI
Hodges Electric	Scituate	RI
Holland Electric	Peace Dale	RI
Homan Associates	Warwick	RI
Home Depot	Smithfield	RI
Houle Plumbing & Heating	Coventry	RI
Howards Heating	North Kingstown	RI
HSP Construction LLC	Coventry	RI
Hughes Inc.	North Kingstown	RI
Hutchins Electric	East Greenwich	RI
HVAC Excellence	Central Falls	RI
HVAC Inc.	Cumberland	RI
Hynson Electrical Construction Inc	Bristol	RI
Iasimone Plumbing & Heating	North Providence	RI
Industrial Refrigeration Corporation	Cranston	RI
Installed Measures	Coventry	RI
IPA Electric LLC	Cranston	RI
IRB Solutions Inc.	Greenville	RI
Iron Pipes Plumbing LLC	Harrisville	RI
Iroquoian Plumbing & Heating	Providence	RI
Island Solar Plumbing and Heating	Jamestown	RI
It's Shocking Electric Corp.	Cranston	RI
Izzo & Sons Electric	Warwick	RI
J & A Electric	Providence	RI
J & K Supplemental Plumbing Inc.	East Greenwich	RI
J Colacone Plumbing	North Kingston	RI
J Joyce Plumbing & Heating	Warwick	RI
J Zarrella Plumbing & Heating	Cranston	RI
J&M Plumbing	Coventry	RI
J. Emilio Reyes	Pawtucket	RI

Vendor	City	State
J.D. Mello Plumbing & Heating Inc	Westford	RI
Jack's Electric	Jamestown	RI
Jacobson Energy Researc	Providence	RI
James J. O'Rourke, Inc.	Warwick	RI
Jan Co	Cranston	RI
Jaquez General Contractor	Providence	RI
Jason Truppi Plumbing and Heating	North Providence	RI
JB Cote Construction	Cumberland	RI
JBK Plumbing	Warwick	RI
JC Electric Inc.	Wakefield	RI
JD Power Electric LLC	North Smithfield	RI
JED Electric Inc.	Greene	RI
Jerry's Paint & Hardware	Narragansett	RI
JG Home Remodeling	Riverside	RI
Jim Silvia	Warwick	RI
Jim Steitz Plumbing & Heating	Greene	RI
JKL Engineering Co. Inc	Providence	RI
JL Electric Inc.	Middletown	RI
JLJ Enterprises DbA Jenkins Heating S	Smithfield	RI
JMAC Plumbing and Heating Inc	Warwick	RI
JMC Construction	Providence	RI
Jo Da Plumma	Warwick	RI
Jo Plumbing	Warwick	RI
Joe Falconi Jr.	Westerly	RI
Joe Vigneault Electrician	Riverside	RI
Joe's Plumbing & Heating	Warwick	RI
John Ek Dahl	Chepachet	RI
John Fletcher Heating	Ashaway	RI
John Giguere Electrician DbA	North Smithfield	RI
John Nicholson Mechanical Contractor	North Scituate	RI
John Schweglewis Plumbing Solutions LLC	North Smithfield	RI
Johnny Mack Electric	Narragansett	RI
Johnny's Home Solutions LLC	Central Falls	RI
Johnny's Oil & Heating	Providence	RI
Johnson & Johnson Plumbing	Narragansett	RI
Johnston Electric Inc.	North Scituate	RI
Johnstone Supply	Providence	RI
Jonathan Svitil	Lincoln	RI
Jordan Osedacz	Warwick	RI
Jose Toledo	Coventry	RI

Vendor	City	State
Joseph C. Grimm Plumbing Inc	Narragansett	RI
Joseph Janton	West Warwick	RI
Joseph Joyce	Westminster	RI
Joseph M Arriaga	Barrington	RI
Joseph McDermott Pipeworks	Bristol	RI
Joseph Soave	North Providence	RI
Josh's Plumbing Services	Foster	RI
JP Island Plumbing	Middletown	RI
Juan Villanueva	Cumberland	RI
Julio Ortiz	Johnston	RI
Just Heat	Portsmouth	RI
K Electric	Warwick	RI
K&B Mechanical LLC	North Providence	RI
Kafin Oil Company	Woonsocket	RI
Kazounis Plumbing and Heating	Hope Valley	RI
KE Plumbing LLC	Burrville	RI
Keith Weindel (Amped Electric)	Coventry	RI
Kelco Electric Inc.	Johnston	RI
Kelley, James	Scituate	RI
Kennedy's Home Improvement	Lincoln	RI
Kenny Pierce	Ashaway	RI
Ken's Heating	Providence	RI
Kent County Electrical Service	Warwick	RI
Kevin Messier Electrical	Cumberland	RI
Kirk Rerick	Hope	RI
Kirkbrae Electric	Lincoln	RI
Kirwin Brothers Contracting	Newport	RI
KME Electric	Woonsocket	RI
KMJ Electric & Construction	North Providence	RI
Knight Plumbing & Heating	Cranston	RI
Koolco Inc.	Wakefield	RI
KP Sullivan Heating LLC	Cumberland	RI
Kwik Plumbing & Heating	Johnston	RI
L&B Remodeling	North Providence	RI
L & F Plumbing LLC	Cranston	RI
Lamar & Sons	Greenville	RI
Lamplighter, In	Little Compton	RI
Lancellotta Plumbing & Drain Cleaning	North Scituate	RI
Landy, Ross	Portsmouth	RI
Leak Free Lifestyles	Coventry	RI

Vendor	City	State
Lee'S Plumbing & Heating	Providence	RI
Leidos Engineering	Newport	RI
Lemay, Donald	Bristol	RI
Leveille Electric	Smithfield	RI
Liddell Brothers Inc.	Woonsocket	RI
Lifespan Corp.	Providence	RI
Lighten Up Electric, LLC	Cranston	RI
Lincoln Electric LLC	Warwick	RI
Lincoln Sheet Metal	Central Falls	RI
LJ Giorgi Plumbing & Heating	North Providence	RI
Lombardi Electric Co	Warren	RI
Lowe's Home Improvement	Warwick	RI
Lubera Plumbing	Foster	RI
Luke Beaudreault Plumbing & Heating N	Harrisville	RI
Luso Plumbing & Heating Inc.	Cumberland	RI
M & Correia's Plumbing & Heating Supply	Warren	RI
M D'Andrea Electric LLC	Portsmouth	RI
M P Samsky Corp.	North Smithfield	RI
M & M Electric	Providence	RI
M. Deltufo Plumbing & Heating	East Greenwich	RI
Macchio Construction	Johnston	RI
Madden Electric	Little Compton	RI
Mador Electric, LLC	Providence	RI
Maggiacomo Plumbing Inc.	Cranston	RI
Magnetic Electric Inc	Warwick	RI
Main Street Plumbing LLC	Pawtucket	RI
Majestic Mechanical	Hope	RI
Malone Plumbing & Heating Inc.	Cranston	RI
Maloney's OIL Company	Pawtucket	RI
Mandarini Plumbing and Heating	Cranston	RI
Manfredo Electric	Warwick	RI
Manning Plumbing Company	Warwick	RI
Mansfield Heating Inc.	East Greenwich	RI
Marcel MS LLC	Pawtucket	RI
Marcelo's Home Improvements	Warwick	RI
Marchetti, Matthew A.	Cranston	RI
Marinelli & Sons Electric	West Kingston	RI
Mario's Appliances	Woonsocket	RI
Marisa Desautel	Providence	RI
Mark Southworth Maintenance	Johnston	RI

Vendor	City	State
Maron Construction Co. Inc.	Providence	RI
Martel Plumbing & Heating	Lincoln	RI
Mastrocinque & Sons Plumbing & Heating	Portsmouth	RI
Matt Plumbing	Warwick	RI
Matthew Fitts Electrical	Greenville	RI
McCormick Electrical	North Kingstown	RI
MCJ Services LLC	Cranston	RI
McKee Bros Oil Corp	Cumberland	RI
Mechanical HVAC	Peace Dale	RI
Mercury Tec Inc.	East Providence	RI
Messier, Jacob	Warwick	RI
Metro Electric	Woonsocket	RI
MH Electric	Cranston	RI
Michael Babbitt	Lincoln	RI
Michael Dias	Smithfield	RI
Michael Faria	Cranston	RI
Michael Freitas Plumbing & Heating	Pascoag	RI
Michael Kennedy	Bradford	RI
Michael LaFleur Electrician	Smithfield	RI
Michael Lundy	Tiverton	RI
Michael Marchetti Electrician	Cranston	RI
Micheletti Oil	Johnston	RI
Midstate Heating & Cooling	Hope Valley	RI
Mike Simone Plumbing & Heating	Cranston	RI
Miller Electric Corp.	West Warwick	RI
Miller Mechanical Inc.	Wayland	RI
MJ Bouchard Heating & Air Conditioning	Greenville	RI
MJ Electric and Refrigeration	Central Falls	RI
MJ Heating & Air Conditioning	Tiverton	RI
MJF Plumbing & Heating	Bristol	RI
Mo HVAC Service	Warwick	RI
Modern Mechancial LLC	Woonsocket	RI
Moises Chevalier Electrician	Cranston	RI
MoonWorks	Woonsocket	RI
Morra Electric Inc.	Johnston	RI
MPG Mechanical	Charlestown	RI
Mr. HVAC LLC	Warwick	RI
Mr. Plumber LLC	East Providence	RI
Mr. Rooter	Warwick	RI
MSC Mechanical	Warwick	RI

Vendor	City	State
MTS Mechanical	East Providence	RI
MussulliElectric	Harrisville	RI
MUTUAL Engineering	Warwick	RI
North Atlantic Heating, Inc	Coventry	RI
N Berardinelli & Sons	Warwick	RI
National Refrigeration Inc.	Warwick	RI
National Service Company	Warwick	RI
NDL Designs	Portsmouth	RI
Near Shore Builders Inc.	East Greenwich	RI
NEC Home Services LLC	Bristol	RI
Nestor Padilla After Hours Plumbing	Providence	RI
New England Boiler Works LLC	Coventry	RI
New England Insulation	Woonsocket	RI
Newbury Insulation	Woonsocket	RI
Newport Electric	Portsmouth	RI
Nexgen Mechanical Inc.	Cranston	RI
Nexus Electric	North Providence	RI
NGB Electric	Smithfield	RI
Nicolas Bermudez	Pawtucket	RI
Nite Oil	Tiverton	RI
Nivaldo Rocha	Pawtucket	RI
Nolin Electric	North Scituate	RI
Norbury Construction Company Inc.	Portsmouth	RI
Northeast Temperature Control	Westerly	RI
Northern Electric	Harrisville	RI
Northern Energy Services Inc.	Providence	RI
NS Electric LLC	Exeter	RI
Oal Service Co.	Central Falls	RI
Ocean State Air Solutions	Portsmouth	RI
Ocean State Mechanical Inc.	Fiskeville	RI
Ocean State Service Group	Central Falls	RI
Oceanline Combustion	Pawtucket	RI
Old Tyme Electric, Inc.	Pawtucket	RI
Omni Electric	Wakefield	RI
On The Side HVAC	Cranston	RI
O'Neil Electric Company	Warwick	RI
Oscar Lopez	Cranston	RI
P & S Electric Inc.	Cranston	RI
Papa's Plumbing	Johnston	RI
Parisi Electric	Warwick	RI

Vendor	City	State
Parrella Electric	Providence	RI
Patrick Butler	Providence	RI
Paul Manfredo Electric	Warwick	RI
Paul Musco	Cranston	RI
Paul Partridge Plumbing & Heating	East Providence	RI
Paul Scotto Electrical	Portsmouth	RI
PAV Electric	Wakefield	RI
Pawtucket Power Association	Pawtucket	RI
Pecchia Plumbing & Heating	Warwick	RI
Pellegrino Plumbing	Westerly	RI
Pelletier & Son Plumbing	North Kingstown	RI
Percivalle Electric Inc	Warwick	RI
Perez Construction	Providence	RI
Perez Plumbing Heating & Air Conditiong	Cranston	RI
Perfect Touch Electrical Contractors Corp.	Cranston	RI
Performance Electric	Coventry	RI
Peter Bibby Ponagansett LLC	Providence	RI
Peter Shadoian Electrician	North Providence	RI
Pete's Heat	Foster	RI
Petrarca Plumbing & Heating	Warwick	RI
Petro Heating & AC Services	Warwick	RI
Petro Home Services	East Greenwich	RI
Petronelli Plumbing & Heating	Johnston	RI
Pezzullo & Sons Electric Inc.	East Providence	RI
Phalanx Engineering Inc.	Warwick	RI
Phillip J Bolster	Wakefield	RI
Phillip J. Forcier Electric	Cumberland	RI
Phillips Plumbing & Mechanical Inc.	Cranston	RI
Phil's Heating & AC	Westerly	RI
Pickles Plumbing and Heating LLC	Mapleville	RI
Pinnacle Plumbing & Heating	Greenville	RI
Platinum Plumbing Inc.	Pawtucket	RI
Plumb Pro LLC	Cranston	RI
Plumbing & Heating Solutions LLC	East Greenwich	RI
Plumbing With Merritt	Warwick	RI
Polaris Plumbing & Heating	Johnston	RI
Polisena Construction	Smithfield	RI
Positive Energy Electric	Saunderstown	RI
Post Theul Electrician	Providence	RI
Potvin Electric Inc.	North Providence	RI

Vendor	City	State
Power by Design Electrical Contracting LLC	Richmond	RI
Preferred Heat Inc.	Providence	RI
Premair HVAC	Warwick	RI
Presto Plumber LLC	Westerly	RI
Pride HVAC Services	Portsmouth	RI
Prince Noah HVAC	Central Falls	RI
Priority Plumbing & Heating Inc.	Warwick	RI
PRO-MAC Inc.	Woonsocket	RI
Property Ventures	Smithfield	RI
ProPlumbing of RI	West Warwick	RI
Prout Mechanical	Warwick	RI
Providence Mechanical Services LLC	Smithfield	RI
Providence Plumbing & Heating	Warwick	RI
PSE Agency	Providence	RI
R & M Electric Inc.	Coventry	RI
R.B. Queern & Co Inc.	Portsmouth	RI
R.C Plumbing & Heating	Smithfield	RI
R.E. Coogan Heating Inc.	Warwick	RI
R.E.M. Electric, Inc.	North Kingstown	RI
R.E.M. Mechanical LLC	North Kingstown	RI
R.F. Heating & Cooling Inc.	Exeter	RI
R.K. Plourd & Son Construction LLC	Warwick	RI
Rafelito Heating Services	Providence	RI
Ralph Desimone	Pawtucket	RI
Ralph Geiselman	Pawtucket	RI
Rama Electric	Wakefield	RI
Ray Ciampanelli Plumbing & Heating Co.	Peace Dale	RI
Raymond Degnan	North Providence	RI
Raymond J Reinsant Plumbing & Heating	Lincoln	RI
RAZ Heating & Plumbing Services	Foster	RI
Reddy Piping Concepts	Cranston	RI
Regan Heating & Air Conditioning	Providence	RI
Regent Electric Co. Inc	Coventry	RI
Reichert & Sons Fuel Oil Inc.	Chepachet	RI
Reilly Electrical Contractor Inc.	Cranston	RI
Relevant Discover-e	Providence	RI
Reliant Electric	Cranston	RI
Remy Plumbing & Heating	Warren	RI
Renaissance Sheet Metal LLC	Cranston	RI
Repair Services	Providence	RI

Vendor	City	State
Restivos Heating & Air	Johnston	RI
RF Audet Inc.	East Greenwich	RI
RF Plumbing & Heating	Johnston	RI
Richard Gayer Electric	Bristol	RI
Rholen Central	Bristol	RI
RI Electrical Contractors (Carlos M. Delgado)	Providence	RI
RI Insulation	Hope	RI
RI Pipe Guys	Warwick	RI
RI Sheet Metal LLC	East Providence	RI
Riasbo	Providence	RI
Richard Ditusa	Johnston	RI
Richburns Plumbing	Portsmouth	RI
Rightway Electric, Inc.	Providence	RI
RISE Engineering	Cranston	RI
Ritacco Electric LLC	Westerly	RI
RMD Plumbing	Newport	RI
RMS Ruggieri & Sons Mechanical LLC	Wyoming	RI
Robert Cordeiro	North Providence	RI
Robert Dionne	Smithfield	RI
Roberts Electric	Pawtucket	RI
Rodriguez Plumbing & Heating	Provincetown	RI
Rolland M Belanger Plumbing & Heating	Pascoag	RI
Rooter Man Plumbers	Johnston	RI
Rossi Electric Company	Cranston	RI
Round One Electric	Harrisville	RI
Rowlett & Son's HVAC	Cranston	RI
RPM Electrical Services	Providence	RI
RSC Plumbing LLC	Exeter	RI
RSM Electric	North Providence	RI
Rudy Almada Electrician	East Providence	RI
Rumford Mechanical	Rumford	RI
Rusco Enterprises Inc./TA	Warwick	RI
Russ Lembo Electrician	Johnston	RI
Ryan Bartlett	Coventry	RI
S & K Electric Inc.	Charlestown	RI
S & S Electric	Chepachet	RI
S Gomes	East Providence	RI
S.B. Carbone	Cranston	RI
Salder Services	Rumford	RI
Sakonnet Electric	Bristol	RI

Vendor	City	State
Sakonnet Plumbing & Heating	Little Compton	RI
Sal Manzi & Son Plumbing & Heating Inc	Cranston	RI
Salks Hardware & Marine Inc.	North Kingstown	RI
Sam Bliven Jr. Plumbing & Heating Inc.	Westerly	RI
Sam Ponte Heating & Air Conditioning LLC	Hope Valley	RI
Sanches Plumbing & Heating	Cumberland	RI
Sanford Electric	Bristol	RI
Santoro Electric	Warwick	RI
Santoro Oil	Providence	RI
Sargent Plumbing Inc.	West Kingston	RI
SAS Brothers Inc.	Johnston	RI
Sauvageau, Roy	South Kingstown	RI
Save The Bay	Narragansett	RI
Scotto Electric	Portsmouth	RI
Seddon Electric	Rumford	RI
Sensible Air Heating AC	Riverside	RI
Sensible Heating & Air Conditioning LLC	Hope Valley	RI
Shamrock Electric	Middletown	RI
Shawn Duguay	Johnston	RI
Shearman Oil	Tiverton	RI
Shepard Services	Cumberland	RI
Sheridan Electric Inc.	Warwick	RI
Sherman Plumbing	Rumford	RI
Sine Plumbing & Heating	East Providence	RI
Size Construction	Cranston	RI
Small's Plumbing Inc	Woonsocket	RI
Smithco Oil Service	Wakefield	RI
Smithfield Plumbing & Heating Supply	Greenville	RI
SMP Electric, LLC	West Warwick	RI
SMS Oil Burner Service	Jamestown	RI
Soares, William	Bristol	RI
Sonner Plumbing, Heating & Construction Inc.	Cranston	RI
Sosa & Son Corporation A/C Heating, Plumbing Refrigeration	Woonsocket	RI
South County Gas Service	Narragansett	RI
Spencer's Plumbing	East Greenwich	RI
SPL Electrical Corporation	North Smithfield	RI
Stable, HVAC Mechanical Contractor	Pawtucket	RI
StandishHeating & AC	Coventry	RI
Stanton Electric, Inc	Cumberland	RI
Statewide Insulation	North Smithfield	RI

Vendor	City	State
Statewide Plumbing & Heating Co., Inc	Cranston	RI
Stedman & Kazounis	Charlestown	RI
Stem Electrical	Warwick	RI
Stephen Andrea Fire & Electric, LLC	Coventry	RI
Stephen Larochelle	Cumberland	RI
Sterling Mechanical Services LLC	Greene	RI
Steven Dubois Inc.	Bradford	RI
Stonylane Electric	Exeter	RI
Sugrue & Associates	Smithfield	RI
Summit Electrical Contractors Inc	Lincoln	RI
Summitt Heating Service Inc.	Coventry	RI
Sunshine Fuels & Energy Services	Bristol	RI
Superior Comfort Inc.	Bristol	RI
Superior Electric	Warwick	RI
Superior Fire & Electrical Services	North Providence	RI
Superior Insulation LLC	Smithfield	RI
Superior LED Lighting LLC	Warwick	RI
Superior Plumbing & Heating	Cranston	RI
Supply New England	Peace Dale	RI
Supreme Duct Systems	Lincoln	RI
Sustainable Energy Solutions	Providence	RI
SW & Sons Plumbing & Heating LLC	North Providence	RI
T. Cabral Rooter & Plumbing Repair	Cranston	RI
T. Gomes Heating & Cooling	Warwick	RI
T.A. Gardiner Plumbing and Heating	Bristol	RI
Tebano Electric	Bristol	RI
Tebo Electric Inc	Woonsocket	RI
Ted Buhre Building Firm LLC	West Greenwich	RI
TempTec Mechanical	Providence	RI
TH Malloy & Sons	Cumberland	RI
The Plumber Company LP	Newport	RI
Thermal Energy Inc.	Cranston	RI
Therrien Mechanical Systems	Lincoln	RI
Thibault Plumbing & Heating Inc.	Cranston	RI
Thielsch Engineering	Cranston	RI
Thomas Adamson Electrician	Coventry	RI
Thompson Properties LLC	Barrington	RI
Thumbs Up Plumbing and Drain Clearing	North Smithfield	RI
TJ Billington & Son Contracting	Warwick	RI
TJP Heating	Johnston	RI

Vendor	City	State
TMT Construction	Jamestown	RI
Todd A Desarro	Hope Valley	RI
Todd Campopiano Electrician	North Providence	RI
Tom Jenkins Jr.	Middletown	RI
Tom McGee	North Smithfield	RI
Tom Peters Plumbing & Heating	Milton	RI
Tom Whitaker	Newport	RI
Tomas HVAC	Smithfield	RI
Toner Electric Company	Middletown	RI
Total Comfort Heating & Cooling	Cumberland	RI
Total Construction Services, Inc.	Providence	RI
TPF Electrical Service	Pawtucket	RI
Trac Buildings	Providence	RI
Travers Plumbing & Heating Inc	Portsmouth	RI
TRG Construction LLC	North Kingston	RI
Tri-Town Community Action	North Providence	RI
Tuma Insulations	Warwick	RI
Tyler Steiner HVAC	Scituate	RI
U.G. Nason's Inc.	Middletown	RI
Ultimate Plumbing	Warwick	RI
United Mechanical	Cranston	RI
Universal Contractor Group LLC	Providence	RI
Universal HVAC LLC	NORTH PROVIDENCE	RI
V. Letizia Plumbing & Heating	Providence	RI
Valcourt Heating Inc.	Tiverton	RI
Valley Heating & Cooling	Hope Valley	RI
Valley Repair Inc.	Wyoming	RI
Van's Electric Inc.	Bristol	RI
Vaughn Oil	Smithfield	RI
Vicmir & Sons	Riverside	RI
Victor Allienello	Providence	RI
Viking Electric Inc.	Riverside	RI
Vision Energy Solutions, Inc	Providence	RI
Vivona Plumbing & Heating Inc.	Portsmouth	RI
Vose Hardware	Woonsocket	RI
Wagner Plumbing Services	East Providence	RI
Wakefield Heating Service	South Kingston	RI
Wakefield Plumbing LLC	Middletown	RI
Waldo Plumbing & Heating	Lincoln	RI
Watermark Plumbing LLC	Cranston	RI

Vendor	City	State
Wayne Electric, Inc.	Bristol	RI
Westbay Community Action	Warwick	RI
Wickford Appliance	Pawtucket	RI
Wilkinson Plumbing & Heating LLC	Hope Valley	RI
William J. Riley Plumbing & Heating	Warwick	RI
William N. Harris HVAC Solutions	Barrington	RI
William Rocchio	Coventry	RI
Wojcik Electric Inc	Narragansett	RI
Wood's Heating Service	Providence	RI
Wordell Heating & Cooling LLC	Little Compton	RI
Wright Comfort Solutions Inc.	Coventry	RI
Wyman & Son Electric	Providence	RI
XPT Plumbing LLC	Exeter	RI
Yoakum Septic Services LLC	Smithfield	RI
Zawadski Plumbing	Warwick	RI
Association of Energy Services Professionals	Phoenix	AZ
Cohen Ventures	Oakland	CA
CRM Orbit	San Francisco	CA
Simple Energy Inc.	Miraloma	CA
Tetra Tech Inc.	Pasadena	CA
E Source Companies LLC	Boulder	CO
Televent USA LLC	Fort Collins	CO
ABC Refrigeration	North Stonington	CT
Best Energy	Pawcatuck	CT
Branco Electric	Trumbull	CT
Cameron Hanna	Somers	CT
Craig C. Porter	Dayville	CT
Duncklee Inc.	Stonington	CT
Dynamic Building & Energy (Formerly Uplands Construction Group)	North Stonington	CT
Eagle Industries Inc.	Colchester	CT
Energy Resources	Thomaston	CT
Greentemp Mechanical Services	Groton	CT
JKMUIR LLC	Rocky Hill	CT
John Doyle Plumbing & Heating	Wolcott	CT
Kelly Electric	Jewett City	CT
KENAIR	East Lyme	CT
Lantern Energy, LLC	Norwich	CT
Lourerio Engineering Associates, Inc.	Plainville	CT
MG Heating & Cooling LLC	Branford	CT
Millas Heating & Cooling LLC	Mystic	CT

Vendor	City	State
Santor Electrical Contractor	North Windham	CT
Santoro Plumbing & Well Service	Prospect	CT
Simmons HVAC	Pawcatuck	CT
South Shore Heating & Cooling, Inc.	Pawcatuck	CT
The HDL Company LLC	Lisbon	CT
Thermaxx LLC	West Haven	CT
Tom Bueler	North Stonington	CT
Valley Heating & Cooling Inc.	Jewett City	CT
Viking Supply Company	Norwich	CT
Williams & Associates	North Stonington	CT
Cadeo Group LLC	Washington	DC
Energy Solutions Center	Washington	DC
ICF Resources LLC	Wilmington	DE
AC Wholesalers	Doral	FL
Burton Energy Group LLC	Alpharetta	GA
National Energy Educational Development Need	Manassas	GA
ECOMFORT.COM	Bolingbrook	IL
Frontier Energy Inc.	Chicago	IL
Innerworkings Inc	Chicago	IL
5C Energy (formerly Affordable Building & Weatherization, Inc.)	Attleboro	MA
A & M Electrical Mechanical, Inc.	Fall River	MA
A&M Electric	Fall River	MA
ABE Electrical Installations Company	Cotuit	MA
Action Inc	Fall River	MA
Advanced Energy Services	Hopedale	MA
Advanced Mechanical Solutions	Mansfield	MA
Advanced Plumbing & Heating	Seekonk	MA
Aetna Corp	Cambridge	MA
AGS HVAC Services LLC	Westport	MA
Ahaesy Electric	Fall River	MA
AI3 Architects	Wayland	MA
Air Tight Insulators	New Bedford	MA
Alternative Creative Energy	Blackstone	MA
Alternative Weatherization, Inc.	Fall River	MA
American Plant Maintenance	Woburn	MA
Andelman and Lelek Engineering Inc.	Norwood	MA
Anthony Vieira Iii Heating & Air Conditioning	Attleboro	MA
ARCA Recycling Inc.	Franklin	MA
Attention to Detail Plumbing & Heating	Somerset	MA
Audio Concepts	North Attleboro	MA

Vendor	City	State
Austin Plumbing & Heating	Franklin	MA
B & L Ductless	Swansea	MA
B2Q Associates Inc.	Andover	MA
Baraby Electric	Fall River	MA
Baystate Energy Reduction	Norwood	MA
Beaupre Electric	Assonet	MA
Biello Electric	Fall River	MA
BL Mechanical Inc.	Uxbridge	MA
Bob Costa Plumbing & Heating	Seekonk	MA
Bob's Appliance Repair	Fall River	MA
Botelho Electric	Rehoboth	MA
BRH Electrical Services	Seekonk	MA
Brian Macdonald Plumbing & Heating	Attleboro	MA
Briggs Mechanical	North Attleboro	MA
Bristow Electric Company, Inc.	Attleboro	MA
Bruin Corp.	North Attleboro	MA
Building Science & Construction	Braintree	MA
Caliber Building & Remodeling	Sandwich	MA
Camara's Heating & Air Conditioning Services	Westport	MA
Central Cooling & Heating	Falmouth	MA
Champion Resources	Ipswich	MA
Classic Sheet Metal Heating & Air Conditioning	Swansea	MA
Coastal Electric Inc.	Hanover	MA
Coastal Energy Services	Swansea	MA
Columbus Energies Inc.	Swansea	MA
Complete Recycling Solutions LLC	Fall River	MA
Conservations Services Group	Westborough	MA
Cotti-Johnson HVAC Inc	Taunton	MA
Coughlin & Associates Energy Consulting	Stow	MA
Curt, Kevin R. LLC	Fall River	MA
D & S Electrical Systems	Lakeville	MA
D.B.A Matthews Cedarfield	Warwick	MA
Dalio Electric	Northbridge	MA
Dave LeBlanc Heating & Air Conditioning	Fairhaven	MA
David J. Dionne Electric	Blackstone	MA
Davis Plumbing & Heating LLC	Monson	MA
Deblok Heating & Cooling	East Longmeadow	MA
Delux Plumbing & Heating	Roslindale	MA
Diamond Heating	Blackstone	MA
DMI	Wellesley	MA

Vendor	City	State
DNV GL	Medford	MA
Dominic Ingemi Electrician	Attleboro	MA
DQR Electric	Marlborough	MA
Drolet Electric	North Attleboro	MA
Dube'S Plumbing	Blackstone	MA
E & V Oil Company Inc./Iron Man Heating	Swansea	MA
Efficiency Forward Inc. (DLC)	Medford	MA
Efficient Buildings LLC	Bridgewater	MA
Elder Plumbing & Heating	Hopkinton	MA
Elite Construction Corp	Seekonk	MA
Elite Energy Services	Fall River	MA
Elite Heating & Air Conditioning	Seekonk	MA
Emerson Swan Inc.	Randolph	MA
Enel X	Boston	MA
Energy & Resource Solutions Inc.	North Andover	MA
Energy Efficiency Advisers Inc.	Mendon	MA
Energy Federation Inc.	Westborough	MA
Energy Monster	Worcester	MA
Energywise Inc.	Sutton	MA
ENGIE Services US	Norwell	MA
Expandable Sound	East Freetown	MA
Fairbanks Energy Services Inc	Hingham	MA
Farias Home Services	Mansfield	MA
FLM Plumbing & Heating	Seekonk	MA
Fluid Industrial Associates I	Woburn	MA
Forte Electric Inc.	Attleboro	MA
Fortin Electric	New Bedford	MA
Foster Electric	Worcester	MA
Fuseideas	Winchester	MA
G & L Electric Inc.	Bellingham	MA
GM Refrigeration	Fall River	MA
G.H. Electrical Service Company	Attleboro	MA
Germaine Plumbing & Heating	Attleboro	MA
GH Electrical Service	Attleboro	MA
Glynn Electric Inc.	Plymouth	MA
H-I-M Mechanical Systems, Inc.	Bridgewater	MA
Hull Electric	Marblehead	MA
HVAC Experts Heating & Air	Auburn	MA
I.N.O Electric Service	Assonet	MA
IBM Corp	Cambridge	MA

Vendor	City	State
Independent Pipe & Supply Corp	Canton	MA
Insulation 2 Save	Fall River	MA
Insulation R Us	Fall River	MA
Ironman Heating & Cooling	Swansea	MA
J & L Heating and Air	Plainville	MA
J&R Contractors	Fall River	MA
Jay Sheldons Heating	Seekonk	MA
JF Electric	Quincy	MA
John A. Moniz Electrical	Swansea	MA
John McDonough Electrician	Boston	MA
John Ryan Electric	Weymouth	MA
Jouberts Heating & Air Conditioning	Warwick	MA
JR's HVAC Design	Belmont	MA
Lafayette & Cross Co. Inc	Seekonk	MA
Larry's Heating	Rehoboth	MA
Lawrence Air Systems Inc.	Seekonk	MA
Ledoux Electric	Seekonk	MA
Lefevre, Douglas	Taunton	MA
Leiser Corporation	Weston	MA
Lexicon Energy Consulting	Concord	MA
Litemor	Norwood	MA
Lockheed Martin	Burlington	MA
Lussier, Joseph - Lussier Electric Services	Worcester	MA
Machado Plumbing & Heating	Dighton	MA
Magina Electrical	Seekonk	MA
MAM Plumbing	Rehoboth	MA
Marc's Sheet Metal Inc	Assonet	MA
Mazzarella Mechanical	Seabrook	MA
Mike Bell Electric	Seekonk	MA
MN Electric	Marshfield	MA
Modern Heating & A/C Co	Rochester	MA
Motus LLC	Boston	MA
Murphy Electric & Industry Control LLC	Pembroke	MA
MV Electric	Acushnet	MA
National Light Bulb Company	North Easton	MA
Navigant Consulting, Inc.	Boston	MA
New England Safety Systems	Taunton	MA
New England Weatherization, LLC	Attleboro	MA
Next Step Living	Boston	MA
NMR Group Inc	Somerville	MA

Vendor	City	State
Northeast Electrical Service	Bellingham	MA
Northeast Energy Efficiency	Lexington	MA
O.H. Burg Corporation	Stoughton	MA
Oracle America	Cambridge	MA
Pacheco Plumbing & Heating	Fall River	MA
Pariseau Electric, Inc.	Seekonk	MA
Patriot Sheet Metal HVAC	Seekonk	MA
Paul Elder Plumbing & Heating Co	Hopkinton	MA
Pelland Electrical Contractors	Chicopee	MA
Peregrine Energy Group	Boston	MA
Plumbers Supply Co	New Bedford	MA
Prism Energy Services	Quincy	MA
Quality Air Metals Inc.	Holbrook	MA
Quality Energies	Rehoboth	MA
R R Services	Swansea	MA
RALCO Electric Inc.	Westport	MA
Ramos Electric	Holyoke	MA
Raymond D. Melanson Electric	Swansea	MA
Rebello Weatherization Inc.	Swansea	MA
Resendes Electric	Swansea	MA
Rethinking Power Management	Boston	MA
Retrofit Insulation	Fall River	MA
Reynolds, Jeffrey Db	Westport	MA
Rich May PC	Boston	MA
Rickard & Sons Plumbing & Heating	Seekonk	MA
Ritchie's Insulation	Westport	MA
River Energy Consultants	Fall River	MA
River St Heating & Cooling	Plymouth	MA
Robinson & Cole LLP	Boston	MA
Roia, Jason Electrica	Fall River	MA
Sean Walsh	Kingston	MA
Seekonk Supply Inc.	Rehoboth	MA
Shane LaCroix	Seekonk	MA
Simon's Supply Company	Fall River	MA
South Coast Alternative Power Solutions	Acushnet	MA
St. George, Paul R.	Dighton	MA
Stateline Fuel & Burner	Seekonk	MA
Steam Trap Systems	Amesbury	MA
Steel Hill Plumbing & Heating Inc.	Rockland	MA
STP Plumbing & Heating	Blackstone	MA

Vendor	City	State
Suburban Heating & Cooling Services	Swansea	MA
Superior Energy Solutions, Inc.	Swansea	MA
Synapse Energy Econ. Inc.	Cambridge	MA
T & J Heating, Air Conditioning and Plumbing	Bellingham	MA
Tangney Electric Co	Worcester	MA
Tappen Plumbing & Heating	Fall River	MA
TC Building	Medfield	MA
The Cadmus Group LLC	Boston	MA
The Energy Efficiency Group	Norwood	MA
THE Heating Man	Rehoboth	MA
Theroux Mechanical	South Attleboro	MA
TNZ Energy Consulting Inc.	Stoughton	MA
Total Comfort Heating & Cooling Inc.	Mansfield	MA
TRC Environmental Corp.	Boston	MA
Triangle Refrigeration	Fall River	MA
Triple B Plumbing Inc.	Seekonk	MA
Trust Energy Solutions	Marlborough	MA
United Refrigeration	Woburn	MA
Utility Energy Inc.	Fall River	MA
UTS Energy Engineering LLC	Quincy	MA
Veolia North America	Boston	MA
Victory Heating, Air Conditioning, Plumbing	Bellingham	MA
Walsh Heating & Air Conditioning	Swansea	MA
Wipro Ltd	Quincy	MA
WM A Hurley Plumbing & Heating Inc.	Springfield	MA
WNUK Plumbing LLC	East Longmeadow	MA
Worcester Electric Association	Worcester	MA
Young Electrical Service	Taunton	MA
Your Plumber Inc.	Norton	MA
Enerwise Global Technologies Inc.	Baltimore	MD
Naomi Mermin Consulting	Portland	ME
G L Smith Heating & Cooling	St. Joseph	MO
Hussmann Corp.	Bridgeton	MO
APEX Analytics	Greensboro	NC
Coastal Lighting LLC	Wilmington	NC
KT&T Distributors	Nashua	NH
Precision Plumbing LLC	Derry	NH
Shamrocks Plumbing	Pelham	NH
Clear Energy LLC	Bloomfield	NJ
CMC Energy Services Inc.	Cranbury	NJ

Vendor	City	State
Dodge Data & Analytics LLC	Hamilton	NJ
Ideas Agency Inc	Blairstown	NJ
SHI International Corp.	Somerset	NJ
Bourque Mechanical System	Rensselaer	NY
Customertimes	New York	NY
EnergyHub Inc.	Brooklyn	NY
Eric Mower & Associates	Syracuse	NY
Homeserve USA	New York	NY
Niagara Mohawk Power Corp	Syracuse	NY
Ram Marketing	Saint James	NY
Rensselaer Polytechnic Institute	Troy	NY
Trane Inc.	Plainview	NY
Questline Inc	Columbus	OH
Cascade Energy Inc.	Portland	OR
Aramark Refreshment Service	Philadelphia	PA
Home Performance Coalition Inc.	Moon Township	PA
One Hour Heating & A/C	Lancaster	PA
Pontoon Solutions Inc.	Pittsburgh	PA
H&K International Inc.	Mesquite	TX
Lopez Negrete Communication	Houston	TX
NexRev Inc.	Plano	TX
Protect America	Austin	TX
Smith System Driver Improvement	Arlington	TX
Compressed Air Challenge	Alexandria	VA
New Navy Exchange	VA Beach	VA
Optimal Energy Inc.	Hinesburg	VT
New Buildings Institute Inc.	White Salmon	WA
Northwest Energy Efficiency Council	Seattle	WA
Slipstream Group Inc.	Madison	WI

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